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A CASE OF TOTAL CYSTECTOMY FOR CANCER*

BY GEORGE GILBERT SMITH, M.D., F.A.C.S.

I. T., a dairyman, aged 50, married, was seen in the Out-Patient Department, February 1, 1926, complaining of intermittent hematuria of one year's duration. For 8 months he had had dysuria and nocturia, voiding 5-6 times by day, 2-3 times at night. He had lost four pounds in a year. Examination showed a small, smooth, elastic prostate. The urine was bloody and contained clots. At cystoscopy there was considerable bleeding. The bladder was clean so far as infection was concerned. Surrounding the neck of the bladder was a typically malignant growth which in places was edematous. The growth involved the anterior wall markedly. Rising from the trigone was a solid tumor of considerable size. The case seemed to be suitable for total cystectomy.

On February 6, 1926, he was admitted to the Massachusetts General Hospital. Physical examination showed a spare, very well developed, healthy man. Most of the teeth were absent. In both groins were scars of a previous inguinal adenitis. The chest was barrel shaped. There was a marked lordosis. The lungs were slightly dull at the apices. The heart was slightly enlarged to the left. Blood pressure 140/90. The abdomen was rounded, with prominent veins at either side; no masses were felt.

On February 11, the patient was discharged as he wanted to go home before being operated upon. He did not reappear until July. On July 23, he was re-admitted, with the same symptoms as before—frequency every half hour, with severe urgency and pain during and after urination. The urine was bloody. July 24, X Ray showed no evident metastases in the long bones, pelvic girdle or spine. July 25, Phthalein test gave 15% first hour, 15% second hour. His NPN was 34 mg. per 100 c.c.

July 26. Operation. Morphia gr. 1/6, atropin gr. 1/150, at 11:30, morphia gr. 1/6, at 12. Gas followed by ether. The bladder was opened with the idea of treating the growth by diathermy. The growth was found to consist of a rather solid, papillary tumor 3 cm. in diameter, arising from the left base. There was also extensive involvement at the left lateral wall extending into the prostate. It seemed that neither resection nor electrocoagulation would do the patient any material good. Total cystectomy was therefore done. The bladder stripped out easily. The ureters were clamped and cut low down and the prostate removed with the bladder. The seminal vesicles, which seemed normal, were not removed. The left ureter was moderately dilated, the right normal. Rubber tubes were passed up each ureter and found to drain. A silk suture was then fastened about the lower end of the ureter, thus fastening it to the

tube. A catheter was passed into the rectum and the rectum opened at the reflection of the peritoneum. The ureteral tubes were fastened to the catheter and drawn out through the anus, leaving about 1 inch of free ureter projecting into the rectum. The rectal wall was then closed over the ureters so far as possible in an oblique manner and the seminal vesicles were drawn together anterior to this. There was relatively little rectal wall available for infolding. The bleeding was carefully stopped and two cigarette wicks left in the cavity. The peritoneum was opened in several places, but was sutured again. The operation lasted three hours. The patient left the operating room in rather profound shock, with a blood pressure of 60/50, pulse 110. He was given caffeine sodium benzoate and an intravenous injection of salt solution containing pituitrin.

Pathological Report: An area of bladder wall measuring 7x12.5 cm. containing an ulcerated growth without definite outlines. Microscopic examination showed squamous cell carcinoma which had a considerable degree of differentiation and was of medium malignancy.

July 27, the patient was much better; blood pressure 170/120, pulse 100. The catheters were draining well. July 28, his NPN was 35 mgm. per 100 ccm. of blood.

July 30, an intravenous injection of 1 c.c. phthalein (ureteral tubes still in position) gave the following results: Right, 20% in 15 minutes, appearance time 6 minutes; left, no urine obtained in 25 minutes.

August 1. The tubes were draining well. The patient's condition was good.

August 2. The left ureteral tube was accidentally pulled out while the patient was shifted in bed. After this urine began to leak through the suprapubic incision.

August 5. Fecal material leaked through the incision.

August 11. The remaining ureteral tube came out. A tube was inserted into the rectum to provide better drainage.

August 13. Feces were draining through the rectal tubes.

August 15. The rectal tube was removed as it was not draining. There was leakage of feces and urine suprapubically.

August 26. He was still draining urine and feces through the wound. A rectal tube was left in most of the time in order to assist the healing of the suprapubic wound.

September 2. Phthalein test: Rectal flow—appearance time, 10 minutes; 40% in 2 hours; abdominal flow—appearance time, 10 minutes; 5% in 2 hours; total—45% in 2 hours.

September 5. The patient had had a small, short rectal tube inserted and fastened in for a week with poor success. This tube was removed. There was no longer any fecal leakage from the fistula. Several ineffectual attempts were made to close the sinus by strapping.

September 8. Still draining urine from the supra-

*From the Urological Service, Massachusetts General Hospital.

pubic wound, but the quantity was diminishing.

September 10. The patient was discharged to the Out-Patient Department. He had difficulty in walking and was re-admitted to the hospital for a short time. X Rays showed no metastases in the long bones, pelvis or spine.

December 13. The difficulty in walking has cleared up. NPN 32. The rectum holds urine for 3 hours. The suprapubic wound has healed. His general condition is good. (Shows patient.)

DISCUSSION

DR. W. C. QUINBY, Boston: I feel that this subject is a very important one and that Dr. Smith is to be warmly congratulated for working so hard and incidentally for getting such a good result. The reason I feel the subject is so important is this. In our Clinic we are finding, as time goes on, that the end results of excision for extensive bladder malignancy are not very satisfactory. In the cases in the Brigham Hospital we have a mortality of about twenty-four per cent. From talking with Dr. Mayo, I understand that their mortality has also been in that neighborhood; that is, bladder malignancy involving a sufficient amount of the wall to necessitate excision with transplantation of the ureter carries a high death rate. Another point—it has been our experience that these growths show a marked tendency to involve the outlet and the floor of the bladder—the fixed portion; so that if you hope to make a satisfactory operation the excision must involve the bladder outlet to such an extent that bladder function is necessarily lost. Dr. Smith has endeavored to meet this problem by a total cystectomy, and so also has Dr. Chute. I am convinced that this is the right method by which to approach such cases of cancer of the bladder. Therefore, I wish to report as an addendum to Dr. Smith's experience my own in the case of a man of forty-eight who appeared, last spring, with the following story, in abstract: He had been operated on two months before, but extensive recurrence immediately appeared. He was referred to me for treatment with radium. His bladder, about the size of a baseball, could be palpated above the pubes. On cystoscopy it was hard to find any area that looked like normal bladder wall, because of masses of malignant papilloma. He had been bleeding and was anemic, but otherwise his general condition was good, and there was no evidence of metastases. I advised that he have his bladder removed, and he agreed to have it done. Dr. Smith removed the bladder in his case extraperitoneally, which offers some advantages. I adopted the two-stage transperitoneal method, and in the first instance opened the bladder and burned off all the tumor I could with the actual cautery to stop hemorrhage; following that I transplanted the left ureter into the sigmoid. This was an easy operation, done on June 15th. The second one was on July 6th, when I excised the bladder and transplanted the remaining

ureter into the sigmoid. The ureter was dilated, making rather a clumsy anastomosis. After the second operation we gave him a blood transfusion. I didn't remove the prostate, and there was no involvement of the vesicles, nor could there be found any evidence of cancer outside of the bladder. He was discharged July 22nd.

For three weeks following his discharge he felt very well. Then he had an attack of sudden, knife-like pain in the abdomen which recurred at rather frequent intervals. Vomiting occurred once. The abdomen was usually distended and there was a gurgling sensation. His condition was made worse by eating and was relieved by the passage of gas. He had lost seventeen pounds in weight. X-ray examination with barium showed a partial obstruction of the ileum, but the exact point could not be located. The colon was normal. The patient returned home, but on September 30th he had a severe attack of obstruction, this time with abdominal spasm and fever. He was brought to the hospital in an ambulance in moderate collapse, the abdomen distended and spasmodic, peristalsis visible, W.B.C. 30,000, Temp. 101.5°. On September 30th an exploratory laparotomy for intestinal obstruction was performed under gas-oxygen anaesthesia. The operative note is as follows: "Although the patient was advised to have an operation while in the hospital about a week ago, he preferred to return home. At the time of leaving he was free from fever and had only his usual amount of gaseous distention. He now returns, however, with all the signs of acute infection in the abdomen, leucocytosis and a temperature of 102°. Immediate operation seems to be his only chance of recovery. This was done through a long median incision in the abdominal wall, the intestines being found definitely adherent by thin, fibrinous adhesions throughout the pelvis. Everywhere, however, the intestines seemed to be of normal color, but on further investigation one loop of small bowel was found to be markedly distended and on following this downward, it was found adherent by about three-fourths of its circumference to a scarred area deep in the pelvis, probably representing the posterior region of the area from which the bladder had been removed. This adhesion was cut by sharp dissection and the lumen of the bowel restored. Further investigation then showed in each flank a definite accumulation of pus and fibrin and this was most marked on the large intestine, ascending colon on one side, descending on the other. Here it was seen to be most dense in the area of longitudinal muscle fibers, where it could not be easily wiped off. Following this evident infection downward, one was led to the general region of ureteral anastomosis. There was no evidence, however, of free leakage, and

there having been no leakage over such a long time following operation, it seemed highly unwise to investigate this region further. During exploration the appendix was seen incidentally and appeared entirely normal. It was not disturbed. A further search for adhesions in the area from which the first one had been removed failed to find any of any consequence, although as a whole the bowels in the pelvis were covered by thin, fibrinous plastic exudate. As much omentum as possible was pulled down into the pelvis, after which the abdomen was closed with drainage. Culture showed *B. coli*. B.U.N. 9 mg." Following this, improvement was marked and normal bowel movements were restored after the 5th of October. He was discharged on October 20th, convalescent.

Copy of letter dated Dec. 3, 1926, from patient.

"On Nov. 4 commenced receiving Swedish massage treatments of the abdomen and have had them ever since twice a week.

"Have no gas pains or any others.

"Weight 129½ lbs. yesterday; my regular weight previous to any operations being 130 lbs.

"Eat three square meals per day. Meat once a day at noon and drink at least 1 quart of milk with plenty of vegetables and fruit.

"Have to arise once during night to go to bath-room; very seldom more.

"Take a walk daily, weather permitting. Strength returning slowly." March 1, 1927.

"Working daily and apparently entirely well."

The extraperitoneal method is a good one, but as satisfactory an anastomosis cannot be made with that method. A prostatectomy beforehand may be an important step.

I wish finally to emphasize what I said in the beginning, that in many instances we are not doing our whole duty to these patients by any less radical form of operative procedure.

DR. A. L. CHUTE: Did you proceed extraperitoneally? You didn't start in through the peritoneum?

DR. G. G. SMITH: No; entirely extraperitoneally.

DR. CHUTE: I feel that that is the way we are going to attack cancer of the bladder, and that Dr. Smith's extraperitoneal plan is the logical approach because you can safely stop at any time. There is no question, however, that you cannot make such a good anastomosis, as by the intraperitoneal method.

DR. QUINBY: In judging whether you make the anastomosis extraperitoneally or intraperitoneally, the decision is going to depend on which way it can be done best from the point of view of the integrity of that kidney later on. I think doing it extraperitoneally is going to give a poorer function in most cases.

DR. SMITH: I lost a case the other day after what seemed to me the most successful intraperitoneal operation I had ever done, where I put both ureters into the sigmoid after Coffey's operation. The patient did well for two weeks and then developed a partial intestinal obstruction which became complete. Enterostomy was done, the obstruction being in the small gut, and I am quite sure that it was due to kinking of the intestines behind the right ureter where it went across from the peritoneum to the bowel. You have to have a clothes-line effect on that side if you do it intraperitoneally, because the ureters are three inches apart where they come out of the peritoneum.

DR. QUINBY: With a good recto-sigmoid, you have room for that. I would do it in two stages, one at a time.

DR. W. W. TOWNSEND: Dr. Cunningham, how did the man come out that Dr. Watson operated on?

DR. J. H. CUNNINGHAM: That was a case of bilateral pyonephrosis in which he did a nephrostomy on both sides. He lived a good many years. Dr. Watson didn't do a cystectomy. There was nothing malignant.

DR. R. F. O'NEIL: I think that that was his idea of how a cystectomy should be done—do a nephrostomy first.

EXSTROPHY OF THE BLADDER

REPORT OF A CASE*

BY FLETCHER H. COLBY, M.D.

The exstrophied bladder is one of the most distressing congenital malformations seen in urology. The unfortunate and innocent individual afflicted with the condition is usually a pariah and outcast, unable to assume any but lowest place in society, ashamed of himself and an offense to others.

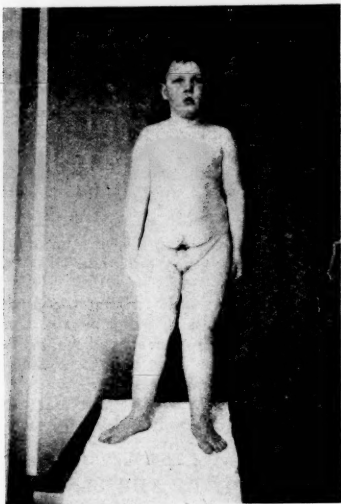
In February, 1924, a boy of seven was admitted to Dr. Quinby's service at the Peter Bent Brigham Hospital. He was the only child of sound American parents. His mother noticed at birth the defect of the anterior abdominal wall filled with red, spongy tissue oozing urine. The boy progressed mentally and physically in a normal way insofar as such a handicap would permit, for he had been unable to attend school or play with other children. He had been free from the usual diseases of childhood and had been otherwise generally well and strong.

Physical examination at the time of admission to the hospital showed the typical deformity of complete exstrophy of the bladder in an otherwise normal, healthy child. Situated just below the umbilicus was a diamond-shaped defect of the abdominal wall about four by four centimeters in size. The defect was depressed below the level of the skin surface and was partially hidden by deep folds of a fat abdomen. This area was filled with a red, spongy, granulation-like tissue from which urine continually dripped and irritated the surrounding skin. At the lower end of the defect a rudimentary penis, devoid

*From the Urological Clinic of the Peter Bent Brigham Hospital, Boston, Mass.

of its dorsal portion, was present, so that the urethra presented but a shallow, open furrow. Two pea-sized testicles were partially descended into a small scrotal sac. There were bilateral inguinal herniae. No pubic symphysis could be felt and the patient walked with a rolling gait.

The accompanying pictures show the appearance of the patient at this time.



EXSTROPHY OF THE BLADDER.
Appearance of the patient before operation.



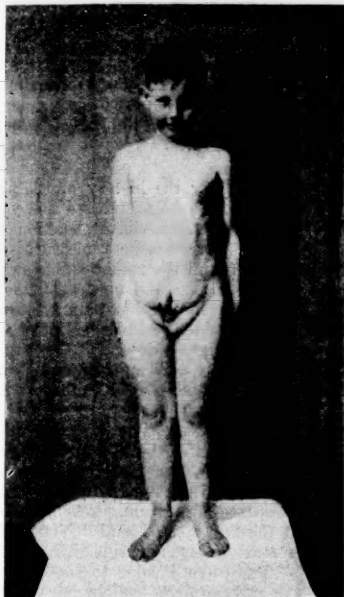
EXSTROPHY OF THE BLADDER.
Appearance of the patient before operation.



Tissue removed from exstrophied bladder. Low power field showing mucous-secreting glands resembling those seen in the rectal mucosa.



Tissue removed from exstrophied bladder. High power field.



EXSTROPHY OF THE BLADDER.
Appearance of the patient after operation.



EXSTROPHY OF THE BLADDER.
Appearance of the patient after operation.

An X-ray of the pelvis showed the usual malformation of the pelvic girdle associated with complete exstrophy, the absent pubic bones having fibrous tissue in their place to hold the pelvis more or less securely.

On February 18, 1924, operation was performed by Dr. Quinby. Under ether anaesthesia the peritoneum was opened and the sigmoid identified. The left ureter was isolated, freed from the bladder for two inches, and cut. A linear incision was made in the sigmoid, piercing the mucous membrane only at the lower end. Through this opening the split end of the ureter was drawn, its flaps being anchored by fine sutures through the bowel wall. The musculature of the defect in the sigmoid was sewn over the remaining inch and a half of ureter in the usual manner. The upper end of the ureter was fixed to the peritoneum by two sutures. The abdomen was then closed and the floor of the exstrophied bladder excised. The end of the right ureter was then freed for a short distance and in it was placed an inlying ureteral catheter. No attempt was made to close the defect left by the excised bladder.

Convalescence was uneventful except for several days of persistent vomiting, during which time fluids were given subcutaneously and by Murphy drip. The patient was up on the thirteenth day.

On March 7, 1924, the right ureter was transplanted. The abdomen was opened on the right side, and since the sigmoid was so situated that its junction with the ureter seemed inadvisable, an anastomosis was made between the caecum and the ureter in the same manner as above. This maneuver could be performed without placing the ureter under any undue tension.

Convalescence after the second operation was complicated by the chills and fever of an ascending pyelitis, but by the seventh day the temperature was normal and from this point on recovery was excellent. Control of the feces was impaired during the first week but gradually returned so that by the tenth day there were from two to four loose movements in the twenty-four hours. He was up on the ninth day.

He was discharged to his home on April 4, 1924, forty-five days after the first operation and twenty-seven days after the second.

A letter from the father six weeks later reported that the boy had been well until after the first week at home, when there had been a recurrence of pyelitis. Bowel control was said to be good, requiring him to get up but seldom at night. There were an average of three bowel movements in the twenty-four hours.

In August, 1926, a letter from the father said: George is in the best of health. He has not had to have a doctor. His bowel control is excellent except when he is nervous and tired. He was ten years old in June and can do anything he wishes. He was haying last week and now attends school."

The case is but an example of the now not unusual success in the surgical treatment of the exstrophied bladder. An unusual feature was the anastomosis of the ureter with the caecum. It was not done in this instance as a matter of choice but of necessity in order to avoid tension, which is fatal to any plastic procedure.

Photomicrographs of the tissue removed from the exstrophied bladder show numerous mucous-secreting glands. A similar condition is found in those infrequent instances of embryonic rests

of the bladder suggesting a relationship between the two conditions, as shown in a paper on this subject in *Surgery, Gynecology and Obstetrics*, April, 1925.

I am indebted to Dr. Quinby for the opportunity of reporting this case.

DISCUSSION

DR. H. M. CHASE, Boston: A girl child, age now 5 years, had in infancy an operation for spina bifida. This was followed by loss of control of the bowels and the bladder. I have thought feasible, and have advised having made at an early age, an artificial anus, and then have in mind implanting the left ureter in the sigmoid and the right one in the caecum. Would that series work out logically, or would there be difficulty in having the artificial anus controlled enough to hold back the urine?

DR. W. C. QUINBY, Boston: You mean that there is no control of the anal sphincter at all?

DR. H. M. CHASE: Yes.

DR. QUINBY: Then the suggestion would be to make an artificial anus through the rectus.

DR. CHASE: Would that be strong enough to hold back the urine?

DR. QUINBY: Yes, if it were made obliquely through the muscles.

DR. CHASE: It is a case that came to me for advice and decision.

TORSION OF THE SPERMATIC CORD

BY H. A. JOHNSON, M.D.

I HAVE here a specimen of torsion of the spermatic cord with gangrene of the testis which I removed last Tuesday. This is from a young man 24 years old, married, without any history of venereal disease. He had had four previous attacks extending back over a period of five years. These had all been similar with agonizing pain in the left testicle. He had been seen by a number of doctors who had given him the same treatment, morphine and heat; and each time attended by recovery. In between these attacks he would have twinges in the left testicle, transient spasms of pain, which he said he relieved by spreading his thighs and breathing deeply. I saw him, a week ago Sunday, in one of these seizures, which followed coitus. His testicle at that time wasn't swollen but was very tender to the touch. I tried to get him to go into the hospital immediately for an operation, but he decided not to as he had had these attacks before and got well. This time, however, he didn't improve. The pain persisted, followed by swelling and accumulation of fluid in the tunica vaginalis. I operated and found this specimen which I will pass around, showing the twist in the pedicle and the beginning gangrene of the testicle. The rotation is from without inwards.

Although Keyes at the Atlantic City meeting, a few years ago, reported only 84 cases collected from the literature, it has been my fortune to see four cases, three of them proven. One was a case of bilateral torsion which I believe to be unique. I have shown the patient twice, once to the Essex County Society, and once before the Lynn Society. He didn't care to come in to-night.

I will relate briefly the history of that case. Three years ago, I was called to see this young man, who complained of violent, sudden pain in the testicle. There was no venereal history. On inspection I found the right testicle swollen to twice the normal size and naturally assumed that that was the site of his pain. He said, "No, it is the left side," adding "I had a similar attack on the right side and it left my testicle this way. It was very sore and painful and kept me in bed for a week, and now there is only a dull sensation there occasionally." He was now having the excruciating pain on the left side. I took him to the hospital and found the left testicle rotated one and a half turns on the cord. I removed the tunica and sutured the testicle to the median septum. When I showed the patient the first time, I said, "You will see the swollen mass on his right side, just as I have described," but when I came to show him, he didn't have any swollen testicle on the right side; it was atrophied. The one on the left was normal and has remained so to the present time.

The first case I saw, in which I didn't make the diagnosis but thought it was an epididymitis, was fifteen years ago. The pain was unrelieved, and to relieve it, I prepared to incise the epididymis. When I cut down, I found a gangrenous testicle with torsion of the cord.

The fourth case I saw wasn't proven. It was a case of a teamster who came into the hospital after a four day debauch. He remembered nothing but came in because of a large, tender scrotum on the right side. There was edema and swelling. I opened the tunica vaginalis, and there was a large black testicle, gangrenous and without any attachment whatever to the spermatic cord. I assumed that that was the trouble in his case, but as I say, that isn't proven.

There has been a good deal said about the etiology of torsion of the cord, and a great many explanations for it have been offered. It seems to me that it is pretty plain why these things happen. It can never occur with a normal testicle with its broad, short attachment. Given a loose, narrow attachment of the testicle, it doesn't seem extraordinary that it should occur. We know that tumors of the ovary with twisted pedicle are common; and when we take into consideration the fact that all of these cases show a long and narrow mesorchium, and the pulls and stresses and traumas to which the

testicles are continually subjected, it isn't surprising at all that these rotations and strangulations should be brought about.

I think the specimen shows the condition fairly well, although the twist isn't so marked as it was when I removed it on account of the hardening action of the formalin which tends to straighten the cord.

DISCUSSION

DR. W. W. TOWNSEND, Burlington, Vermont: It was most interesting to hear Dr. Johnson's paper on so rare a condition as "Torsion of the Cord." I asked Dr. Chute, today, if he could recall a paper that was read at one of our societies, some eight or ten years ago, wanting to look it up as within the past two weeks we have had a case that parallels Dr. Johnson's: A man, thirty, went to visit a sick brother in one of the villages of Vermont, and upon retiring, one night, after a workless day, was seized with severe pain in the right inguinal region. He tossed and turned for the greater part of the night and in the morning discovered he was swollen in the groin and in the right testicle, which was very painful and extremely sensitive to the touch. He called the local practitioner, who diagnosed the condition as orchitis, and applied the usual antiphlogistic measures. This treatment was carried on for three weeks without benefit. The patient was then sent to the Hospital to me, and after examination and learning that the sick brother had a tuberculous joint, and as my patient and the brother were most intimate companions, I ventured a probable diagnosis of tuberculous epididymis with symptomatic hydrocele, and advised immediate operation. My son operated the following day and on cutting down on the tumor remarked to his assistant that the condition found was unfamiliar to him and sent for me. Examination of the open field showed a gangrenous testicle, and I suggested to my son the possibility of torsion of the cord which, by further manipulation, was shown most satisfactorily. This patient had never had any symptoms of a "loose testicle" prior to his attack of torsion.

DR. A. L. CHUTE, Boston: A good many years ago, I was called out to see a freshman, a boy who had no venereal disease and no possibility of it. He had had tremendous pain for an hour and this torsion could be felt. It was a turn and a half. We were fortunate enough to get it early enough and untwist it. Twisting one way tightened it up and the other way, untwisted it. We were thus able to reduce it and he got well without surgery. He stayed well and is so now.

DR. H. A. JOHNSON, Lynn: I thought of that at first and tried to do it, but was unsuccessful. Most of the cases reported show the turn from without inward.

DR. TOWNSEND: In my case the testis had rotated on the long axis so that the globus major had taken the position of the globus minor.

DR. B. D. WETHERELL, Boston: I want to report the case of a man, 55 years old, who presented himself to his local doctor for painful urination. He found brick dust and some pus in the urine. On forced fluids together with alkalies the urine cleared up. Everything went all right until November, when the patient passed some blood with no pain. His physician saw him and sent him home. He then had another attack of hematuria without pain. At 11 o'clock that night and again the next day he had severe pain which required morphine. The pain was entirely in the left flank. Three days after that attack the pain and blood ceased except microscopic blood. He was then referred to the office and came to see Dr. Chute on December 9. Nothing could be felt in his flank. There was microscopic blood. He was referred to the hospital for cystoscopy (showing x-ray plate with the ureter catheters in position). (Next plate.) He had 15 c.c. of bromide, and it apparently goes up into an upper calyx which has not filled out. Twenty c.c. were injected (next plate), and the bromide apparently came out into the tissues. It disseminates there and besides there is an extrarenal dilatation. His intravenous renal function test was good on both sides. The urine from the right showed a rare leucocyte with the amount of blood you would expect from catheterization. On the other side were a great many leucocytes with much blood. With this fluid getting out into the extrarenal tissues he was advised to have an exploratory operation, which Dr. Chute did this morning. The upper pole was adherent to the fatty capsule, and he had an upper pole which was hard; it was deemed advisable to take the kidney out. (Showing specimen.) Here is a quite well marked encapsulated hypernephroma. I took it to Dr. Hartwell, who said he thought it was a typical hypernephroma and not suggestive of anything else.

In 1925, Dr. Chute presented a paper containing a report of 43 such cases, of which 39 appeared in men and 4 in women. In 25, the right side was involved; in 16, the left; in 1, both sides, and another case was not recorded. Of these 43, 37 were operated upon: 33 showed hematuria; 27 pain; and 27 a mass. Of these 37, 3 had hematuria alone; 12 had hematuria and pain; 12 had hematuria and a mass; 2 had pain and a mass; and one, a mass alone. Nothing could be felt in the case which I am reporting and, except for the sudden pain at the very first, he had no pain and no macroscopic blood.

DISCUSSION

DR. W. W. TOWNSEND: I think Dr. Wetherell was most modest in referring to the tumor

as being moderately adherent to the fatty capsule. I saw the operation, this afternoon, and to me it would have been a difficult nephrectomy. The lesson to be learned from this report is that in hematuria there is pathology

hydronephrosis, and yet the top of that kidney did not look right. The patient sensibly took my advice to cut down on the kidney. This case we got in time. I hope this man may live a long period without recurrence. It shows how



somewhere. Years ago, the case reported would have been passed up as one of essential hematuria.

DR. A. L. CHUTE: I asked Dr. Wetherell to report this to show how careful we must be that we do not miss these cases. Here was a man about whom I was doubtful. He had a little

careful we must be, and if there is any reasonable doubt, we must explore these cases.

DR. C. N. PETERS, Portland, Maine: I should like to show a cystogram. This patient, 58 years old, was a locomotive engineer, who had been perfectly well up to three months ago,

when he complained of frequency. The cystoscopic examination showed a small bladder with a thickened wall, but no definite mass could be made out. The ureters were easily catheterized. (showing plate.) The whole tract held two ounces of iodide. The bladder appears to be well fixed. There is an irregular line at the top here, but no definite mass could be made out. The Wassermann is negative; there is no pus from either kidney, or from the bladder; a sterile culture is obtained from the whole tract. I would like to have some comment on it.

DISCUSSION

DR. ROGER GRAVES, Boston: What did his ureter openings look like?

DR. PETERS: They were contracted, but it was easy to pass a No. 6 catheter. It looked as though the openings were thickened.

DR. GRAVES: Were they patulous and rigid?

DR. PETERS: Yes; they were. They had lost their normal elasticity.

DR. CHUTE: I can't think of anything unless it is a case of obliterating pyelonephritis with that peculiar pelvis, such as Braasch has reported.

DR. PETERS: There is no infection. The man was working up to three months ago.

DR. CHUTE: That is my only suggestion.

DR. PETERS: What would you do to him?

DR. CHUTE: Leave him alone and let him get well.

DR. W. D. BIEBERBACH, Worcester: I wish to show a case of an anomaly of the upper urinary tract—duplex pelvis and ureters on both the right and left sides in a woman thirty-eight years old. All her symptoms were those of infection of the genito-urinary tract. The history suggested infection following pregnancy, dating back five years. At present the patient is pregnant and in her fourth month. This plate is of the left side, showing ureteropyelogram of double ureters and pelvis and a very good outline of the kidney. The other plate is of the right side, showing the same condition. There was a function test, and the total percentage from each pelvis was low. Culture of urine from each pelvis showed colon bacillus except from the upper right pelvis and this was staphylococcus albus. Under lavage and dilatation her symptoms greatly improved and at present date she is going along with her pregnancy.

DR. AUGUSTUS RILEY, Boston: I have here three pyelograms. The first one is of a case somewhat similar to that of Dr. Bieberbach, but of the left side only. Apparently this anomaly gave the patient no symptoms at all. This plate shows the double ureter (showing plate of left kidney).

The next plate is one of a young woman who has been having a great deal of pain in the region of the right kidney. The plate shows a double ureter and pelvis (showing plate). I think this ureter (indicating) is overlapping that ureter.

The third plate is that of a man sent to the hospital for X-ray examination, because of pain in the region of the right kidney. He had passed blood. The plate shows (indicating) these enormous, distinct, branching calyces of both kidneys, with a good outline of a double pelvis on the right side and also on the left side. As you see, the right kidney extends from under the ribs above to below the crest of the ileum. The left kidney is somewhat similar to the right kidney, but not so large. From the thinning out in the shadows of both right and left kidneys, the diagnosis of probable polycystic kidneys is made. I think we are safe in saying that we have double polycystic kidneys, each with a double pelvis.

DR. EDWARD L. MERRITT, Fall River: I have a film to demonstrate, showing a possible danger in ureteral catheterization. The patient is a young lady whom I cystoscoped several days ago. Catheters were passed clear to the kidneys, and a right pyelogram made. I then attempted to withdraw the right catheter as I injected more sodium iodide solution, in order to make a ureterogram. I met with considerable difficulty in withdrawing the catheter as it appeared to be caught, and it was only after a great deal of manipulation that I finally got it out. When the plates were developed, the preliminary film made prior to injection showed the reason—the catheter had tied itself into a perfect figure-of-eight knot. That may come about from passing the catheter too far into the kidney pelvis and the lesson to be learned is not to make too much traction on a catheter that will not pull down easily for by so doing, if the catheter has tied itself into a knot, one may get into serious difficulties.

In this case it was only after considerable manipulation and further insertion of the catheter that the knot was untied.

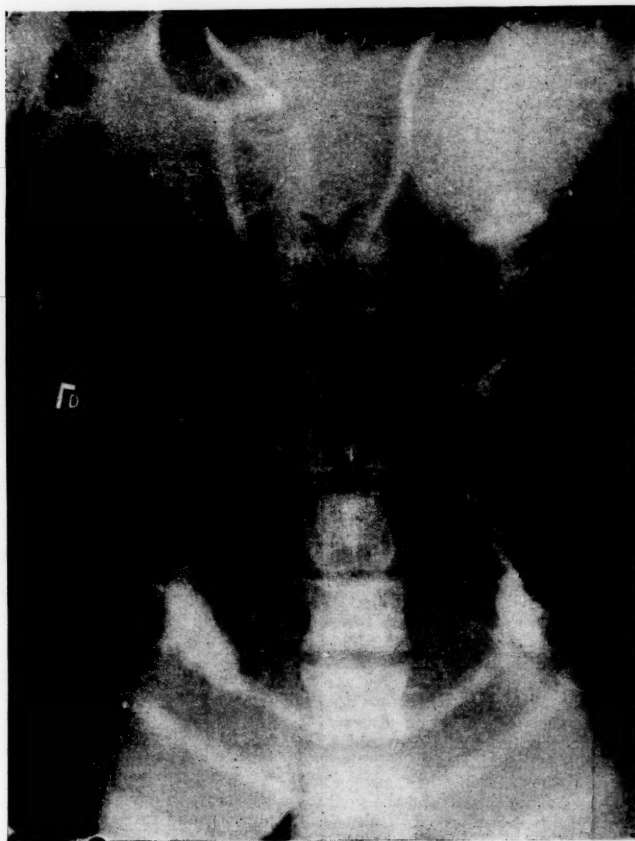
DR. O. D. PHELPS, Worcester: I wish to show a slide of a case, of interest from the fact that no ureters were recognized at cystoscopy. A girl of 13 was sent to the hospital for frequency. Two large openings were seen, which were taken for diverticula. A cystogram was made, which revealed enormous dilatation of the ureters, as seen in the slide (showing slide). Tubercle bacilli were isolated from the bladder urine and the general condition of the patient has improved wonderfully on systemic treatment.

DISCUSSION

DR. W. W. TOWNSEND: What was the condition of the bladder? It must have been very tolerant to allow that cystogram.

DR. PHELPS: There were ulcerations and flakes of pus. It was remarkable that she stood

the patient's head was low. Then the right kidney pelvis and ureter would fill, and the fluid would run back into the bladder and find its way into the left side, because of the enormous dilation of the left ureter. The bladder capacity was very small.



Pyelogram in a case of bilateral polycystic disease of the kidneys, in which there is a double pelvis on each side.

the cystoscopy as well as she did. The entire procedure was done with a local anaesthesia only.

DR. AUGUSTUS RILEY: I have a woman with a tabetic bladder. This case showed a condition somewhat similar to Dr. Phelps' case. I couldn't get a good pyelogram because of the great dilation of the ureters. The fluid would run back and around the catheter into the bladder. The X-ray table had to be tipped so that

THE INCOMPETENT URETERO-VESICAL VALVE ON THE UNINVOLVED SIDE IN RENAL TUBERCULOSIS*

BY BANCROFT C. WHEELER, M.D.

(By invitation)

ONE of the possible causes of error in the diagnosis of tuberculosis of the kidney is the re-

*From the Urological Clinic of the Peter Bent Brigham Hospital, Boston, Mass.

gurgitation of vesical contents through an incompetent uretero-vesical valve into the ureter on the side where the kidney is not tuberculous.

Regurgitation, as evidenced by a cystogram, may occur through a ureteral orifice which is

mon situation, however, and the only one usually recognizable, exists where the orifice is fixed open—the "golf-hole" type—and bladder, ureter, and pelvis form a single, freely communicating chamber. This condition has long



X-Ray film showing a ureteral catheter which has formed a knot within the kidney pelvis.

not obviously patent when observed through the cystoscope. In a still less advanced stage of disease, intermittent refluxes probably take place when the valve is perfectly competent except under unusual combinations of muscle-tonus and ureteral peristalsis. The most com-

mon situation, however, and the only one usually recognizable, exists where the orifice is fixed open—the "golf-hole" type—and bladder, ureter, and pelvis form a single, freely communicating chamber. This condition has long

been known and is associated in most instances with tuberculosis of the bladder, ureter, and kidney on that side. Occasionally, however, incompetency of the uretero-vesical valve may exist on the unin-

involved side. This possibility was first men-

tioned in 1912 by Lichtenberg¹, who cited a clear-cut case. Pasteau², in 1914, reported a similar case. These are the only well-defined cases I have been able to discover in a brief search of the literature, although frequent allusions have been made to the condition. Braasch and Scholl³ state that it "has not proved to be a frequent source of error in diagnosis"; Gayet and Rousset⁴ and Bumpus⁵ warn against too vigorous bladder irrigations after nephrectomy for tuberculosis, on account of the danger to the remaining kidney if there is a regurgitation; Cunningham⁶, discussing Bumpus' paper, says that he has seen examples; Lepoutre⁷ calls attention to Pasteau's case.

The nature of the pathology is not clear. In some cases the healthy orifice may be pulled open by contraction at the other side of the trigone; in others, the cystitis at that site may simply take the form that it more commonly takes about the primarily involved orifice; the possibility of congenital dilatation is mentioned by some of the French observers. The diagnosis can be made usually, but not always, with the cystoscope; sometimes by seeing bladder contents drain through a ureteral catheter; but most accurately by a cystogram.

Praetorius⁸ summarized the possible clinical results of regurgitation from a tuberculous bladder up to a previously normal kidney as follows. (1) tubercle bacilli may be found in the urine from the uninvolved side; (2) the previously healthy kidney may thus become secondarily infected and pyonephrotic to such a degree that removal of the tuberculous kidney is contraindicated; (3) the kidney may easily become tuberculous itself. The chief difficulty in reaching a decision about such a case naturally lies in the inaccuracy of the data as to function and contents of the urine obtained from the regurgitant ureter. Having found a golf-hole orifice, it may be extremely difficult to determine which is the tuberculous kidney, or, if both are affected, whether one is still sufficiently competent to warrant removal of the other. These problems, may, of course, be complicated by the existence of bi-lateral incompetent valves.

The following two cases from the records of the Peter Bent Brigham Hospital illustrate these difficulties:

1. M. S. (Surg. No. 24379), a girl of 17, entered the Peter Bent Brigham Hospital, July 11, 1925, complaining of frequency and burning micturition of 5 years' duration.

Her family history showed that her grandmother had died of pulmonary tuberculosis and also two years previously, a cousin, with whom the patient had spent several days shortly before her death.

In the past history it was noted that three years before admission she had lost 25 lbs. in weight and had suffered from weakness and anorexia over a year's time. Two years later she had a heavy cough for two months, and on two or three occasions raised blood-tinged sputum. During this time she had head-

aches almost constantly and also noticed edema of the ankles at night.

The present illness began 5 years ago with frequency and burning micturition. A few months later she began to notice hematuria. She had visited a number of physicians who had given her bladder irrigations, pituitrin and other medicines without relief. For nearly a year she also had right costo-vertebral pain—dull, constant, and non-radiating. This pain had been absent for the past year. Her frequency on entry was about every fifteen minutes.

Physical examination showed a well-developed and nourished girl, in no obvious distress. The abdomen was not tender and there was no costo-vertebral tenderness. The kidneys could not be felt.

She had a normal temperature and white count. The urine contained a trace of albumen and many white cells. Three hunts for tubercle bacilli were negative. An X-ray of the chest showed no signs of active pulmonary tuberculosis. Plain kidney X-rays showed a "rather irregular kidney shadow on the left; the right kidney was not made out."

Five days after admission a cystoscopy was done under gas-oxygen anesthesia. The bladder held only 75-80 cc. All normal architecture was obliterated by cystitis, and bleeding was easily caused from many large tuberculous ulcers in the wall. The left ureteral orifice could not be found. The right orifice was very large and patulous, of the "golf-hole" type. A catheter was introduced up the right ureter as far as the third lumbar vertebra, where it stopped. No flow was obtained until about eight hours afterwards, when two test-tubes full of urine were obtained very quickly. It was thought that this might be regurgitation from the bladder. Some of the urine was pigged, and a positive report was later returned. The sediment, examined at the time, contained occasional white cells, but no tubercle bacilli.

Six days after the first cystoscopy another was done, after an injection of indigo-carmin. The right ureteral orifice appeared as before, widely open. The left orifice was not seen, but some dye was observed coming from the area where it normally would have been.

The following day operation was performed under gas-oxygen anesthesia. The pre-operative diagnosis was tuberculosis of the right kidney. On exposure of the right kidney it was found to have a tensely filled pelvis, and the ureter was dilated to a diameter of about 2½ cm. There was no pathology, however, in the soft tissues around either the ureter or the kidney and no evidence of tuberculosis. A small incision was made in the pelvis of the kidney and an instrument passed freely thru this into the bladder. It thus was decided that the preoperative diagnosis was at fault and that the right uretero-vesical valve had been destroyed by the distortion of the bladder due to tuberculosis primary in the other kidney. The wound in the pelvis was then closed and the abdominal muscles closed with drainage. The patient was turned on the other side, and the left kidney exposed. It was extensively caseated and densely adherent to the perinephritic fat. After a rather arduous dissection, it was entirely freed and removed, together with about four inches of the upper end of the ureter. The pathological report was "tuberculosis."

After operation the patient was anuric for two days, thereafter voided freely, though as before, frequently and in small amounts. An inlying urethral catheter was introduced on the tenth day and replaced at intervals through her stay in hospital to guard against retention with ascending infection thru the patient's right ureteral orifice. She had a very slow convalescence, with a prolonged febrile course and continued drainage from her left side. She left the hospital on her sixty-fifth postoperative day still weak and with her wound draining.

A letter a year later stated that she was in poor health, spending most of the time in bed.

2. R. R. B. (Surg. No. 25668), a boy of nine, entered the hospital January 20, 1926, because of long-continued weakness, general malaise, and headache. His family history was unimportant.

His past history showed that he was born and brought up during the early part of his life under very unsatisfactory hygienic conditions. He had numerous childhood diseases.

The present illness began following a mild attack of scarlet fever, which he had eleven months before admission. He recovered satisfactorily except that urine examinations on several occasions showed the presence of albumen. At about this time he first noticed some frequency of urination, which persisted till admission, increasing in severity so that for the previous two months he had urinated about every 20-30 minutes during the day and about every hour at night. For the preceding month the parents had noticed some gross blood in the urine upon a number of occasions. He had been losing weight and strength, complained of weakness and fatigue and had been kept out of school for nearly a year.

Physical examination showed a rather thin, pale boy in no obvious discomfort. The tonsils were slightly enlarged and ragged. The lower pole of the right kidney was just palpable. There was no costo-vertebral tenderness.

His temperature ranged from 100° to 101°; the white count was 8,000; the urine showed a slight trace of albumen and many white cells. Tubercle bacilli were found in the sediment. The total function was 42%. X-rays of the chest showed no evidence of tuberculosis. Kidney films were not satisfactory.

Three days after admission cystoscopy was done under gas-oxygen anesthesia. A No. 16 cystoscope was passed with some difficulty on account of the small size of the urethra. The bladder urine was quite cloudy. There were several small ulcers about the right ureteral orifice, which was itself enlarged and distorted. The left ureteral orifice was widely open and of the "golf-hole" type. The left ureter was catheterized the full distance without difficulty. The small size of the urethra made it impossible to pass another ureteral catheter, so that the right side was not catheterized. Specimens collected showed from the bladder 120-200 white cells and tubercle bacilli; from the left kidney 50-75 white cells and tubercle bacilli. A culture of the bladder urine showed streptococci; from the left kidney urine there was no growth.

Here it was felt, partly in the light of the previous case, that the left orifice was probably pulled open by the process on the right side, which was thought to be primarily involved. The presence of tubercle bacilli in the urine from the left ureter, it was thought, might be explained by the regurgitation of infected vesical contents through the patient's uretero-vesical valve, although bilateral involvement was perfectly possible.

Seven days after admission, the patient was operated on under gas-oxygen anesthesia. Through a transverse incision the right kidney was exposed and found to be extensively diseased. It did not show the usual amount of adhesion to the perirenal fat, however, which is so frequently seen in this disease in the adult. The ureter was enlarged and its walls thickened. It was clamped and cut and its stump painted with carbolic acid. A clamp was adjusted on the renal pedicle and the kidney cut away. The pedicle was ligatured and the wound closed without drainage. A pathological report of tuberculosis was later returned.

The patient had an uneventful convalescence, the wound healing by first intention, and was discharged on the thirteenth day after operation, having still marked frequency with some pyuria.

He returned a month later with a small residual

abscess in the wound, which was opened, necessitating a stay of three days.

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DISCUSSION

DR. W. C. QUINBY, Boston: Such cases illustrate a problem which we see at frequent times concerning the difficulty in making a diagnosis as to which kidney is tuberculous, or whether both kidneys are tuberculous. It is often hard to make adequate examinations of these extensively diseased bladders. A large golf-hole ureteral orifice is not always a proof of disease on that side, for we must keep in mind the deforming effect of tuberculosis on the wall of the bladder, which may go so far as to disturb the ureter on the well side. Then the combined urine from the bladder may readily penetrate upward through the ureter as far as the kidney; and it will become a matter of speculation as to whether the second kidney has been involved in disease, or not. We have just had an instance of this in a woman who had had a preceding nephrectomy for tuberculosis. On examination tuberculosis of the bladder was evident and the ureter to the remaining kidney widely dilated. Whether the remaining kidney was tuberculous could not be learned. The ureter, however, contained a partially occluding stone. She was in poor general condition and eventually died, and at autopsy the remaining kidney was found to be free from tuberculosis. I think these cases emphasize the uncertainty presented in regard to accurate diagnosis.

ACUTE CORPORA CAVERNOSITIS—AN UNUSUAL LESION OF THE PENIS

BY ROGER C. GRAVES, M.D.

PRIAPISM is defined as a persistent painful erection of the penis, unaccompanied by sexual desire. The condition occurs, though not commonly, as a symptom of certain neurological and general systemic diseases. It may also be caused reflexly by local irritation of the bladder or genitalia, such as may be produced by stricture, bladder calculus, stone in the prostatic urethra, etc. Priapism, however, resulting from

an acute diffuse lesion involving the corpora cavernosa alone is very rare, and because of its rarity the following case is of interest.

An Irish laborer, married, age forty-three, came into the office on March ninth, complaining of a painful erection of the penis, of two days' duration. His family history was unimportant. He was a hard-working man of exemplary habits and the father of a healthy family. His past health had been uniformly good, there having been no serious illnesses or operations. Venereal infection of any sort, at any time, was emphatically denied. Two weeks before the beginning of the present illness he had had a brief but severe cold and cough, and the paroxysms of coughing had given pain in the perineum.

Two days before coming to the office, the patient was awakened during the night by a painful, extreme erection of the penis. The condition persisted for the rest of the night, and though in the morning he attempted to go to his work, it was necessary for him to return at once to bed. He sent for his family physician, who applied ice bags and resorted to the usual bromides and even hypodermic morphia, without affording the slightest relief. There had been no alcoholic or sexual excess before the onset of the difficulty; there was no record of injury, and no story of central nervous-system disturbance.

Physical examination found a well developed, well nourished man of forty-three, who did not appear acutely ill, but who was obviously in extreme distress. Temperature 99.6; pulse 100; and respiration 20. A complete general physical examination was essentially negative. The lungs were clear, the heart normal; blood pressure was 150/70. The back gave no evidence of abnormality, and the abdomen was negative. There was no edema. The penis was pointed upwards in the mid-line in extreme erection, almost touching the abdominal wall. The corpora cavernosa which appeared to be equally involved, were large, firm, and very tender. These changes were uniform throughout, there being no irregular or nodular areas. The corpus spongiosum, including the glans, did not appear to be affected. The scrotum was normal. On rectal examination the prostate was found to be normal in size and consistency, and it was not tender. The seminal vesicles could not be felt. The urine, voided with some difficulty, was straw, cloudy, 1020, neutral; albumin: absent; sugar: absent; sediment: normal except for a few leucocytes. A blood smear showed red corpuscles, which were perfectly normal in size and shape. There were no nucleated forms. The white blood cells were not abnormally increased in number. The Wassermann report was negative.

The patient was sent at once to the hospital, and there the usual medical measures failed to produce any change in the condition of the penis. In fact, because of the extreme pain and tenderness it was difficult to accomplish even relative comfort.

On March eleventh, four days after the beginning of the erection, the patient was taken to the operating room for examination under ether. The anesthesia was carried to the limit of safety, without affecting the priapism in the slightest degree. Urethroscopy and cystoscopy were therefore impossible. There was no suggestion of a urethral lesion, however, because a number 18 Fr. woven-silk catheter could be passed to the bladder without obstruction, without causing bleeding, and withdrawing clear urine. Rectal and abdominal examinations carefully repeated under the anesthesia were negative.

A careful neurological study was made later by Dr. Henry Viets, who found no signs or symptoms of a lesion of the central nervous system. A summary of his report follows:

"Pupils equal and react to light and accommodation. Cranial nerves normal. Fundi, normal. Arms

normal in power and sensation. Reflexes normal. Legs: no loss of power or sensation. Sacral segments normal. No vasomotor changes. Reflexes: knee jerks and ankle jerks equal and active. No clonus or Babinski. Position and vibration sense in legs, normal. Lumbar Puncture: cells, 1; ammonium sulphate, 0; total protein: 39 mg. per 100 c.c. (normal) Wassermann: negative, Goldsol: 0000000000, Pressure normal."

On March 21, fourteen days after the beginning of the erection, I again took the patient to the operating room. Ether anesthesia was used and the patient was placed in the lithotomy position. Linear incisions were made in the perineum on each side, lateral to the bulb of the urethra, and exposing the corpora cavernosa by blunt dissection, near their origin from the rami of the ischia. The corpora were then incised in the long axis, from the level of the bone to the margin of the scrotum. Immediately upon opening these structures there was an escape of a black tar-like substance, resembling old blood, and the priapism began to disappear. There was no fresh bleeding. The corpus on each side was found to be a mere shell, with the erectile tissue apparently largely destroyed and replaced by clot. Specimens were taken for culture; the cavities were emptied and packed with iodoform gauze. Similar incisions with similar results were then made distally on each side along the shaft of the penis, at two levels—just distal to the scrotum and just proximal to the glans. There was free communication between these openings, within the corpora. The incisions in the penis were lightly closed over the packing with interrupted sutures of silkworm gut. A number 24 Fr. soft-rubber catheter was then passed to the bladder and secured in position to afford drainage of urine away from the surgical field and to facilitate dressings. A pressure bandage was applied finally and at the close of the operation the priapism had entirely disappeared.

The cultures showed no growth.

The convalescence was comfortable and uneventful and the patient left the hospital on the tenth post-operative day. All but one of the six incisions closed promptly. There was persistent purulent drainage from one of the perineal openings, due probably to secondary infection, which lasted for several weeks, and required repacking. Healing was finally complete, and there was no return of the disease. When I last saw the patient, after several months, he reported that his general health was excellent, erections were normal, and sexual intercourse entirely satisfactory.

With little doubt the etiology of the priapism in this case was a generalized thrombosis, in the blood spaces of the erectile tissue of the corpora. While the cultures were sterile, there was possibly present some low-grade infection which was responsible for the lesion in the beginning and which, judging from the story, may have had its origin in the respiratory tract. (Aschoff, according to Hinman, doubts the importance of infection under these circumstances.) The condition may be described as an acute corpora cavernositis in contra-distinction to the chronic fibrosis of the penis, which is so commonly encountered in urological practice. Acute cavernositis, on the other hand, is very rare, and for this reason is given but scant mention in the text-books. In fact, in most instances, no reference is made to this disease. The information in the current literature is just as meager, and in the publications of the past ten years I have been able to find but one reported case. This

was described in 1917 by Esteves and Chiaporri of Buenos Aires. Their patient was unmarried and fifty-five years of age. He had had unusually prolonged erections for some time before the beginning of the final difficulty. He entered the hospital two days after the onset of priapism and on the tenth day the corpora cavernosa were punctured at about the mid-point on each side, with a large trocar. "Blackish fluid blood" was aspirated, with partial relief, but patches of induration remained in the penis after six months. Esteves and Chiaporri were of the opinion that operation should be performed in these cases, and that while a gradual subsidence may take place in some instances, a better functional result may be expected where surgical intervention is resorted to.

In 1914 Challier and Gaté published, in the *Lyon Médical*, a paper entitled "Prolonged Priapism Unaffected by Medical Treatment." These authors accredited Velpeau with having performed, in 1852, the first surgical operation for the relief of priapism. A single incision in the penile portion of one or both corpora cavernosa was again practised and described by Birkett (1867), Mackie (1872), Goebel (1904), Haillet and Viardin (1904), Sick (1905), Mori (1905), Terrier and Dujarier (1906). Terrier and Dujarier insisted that "most cases where the functional result has been good are those where there has been intervention."

The case of priapism which Challier and Gaté described had had a phlebitis of the left leg three years before, followed by a peculiar dilatation of the veins of the lower abdomen and left groin. One month before there had been an erection for forty-eight hours with sudden relief. The final state of priapism began at night following excessive indulgence in alcohol. The patient entered the hospital after eight days. Operation was then performed. The priapism was relieved but the degree of functional recovery was uncertain.

The case that I have presented is unique in that there had been neither alcoholic nor sexual excess before the onset of the priapism. A careful history and physical examination moreover failed to reveal any local or general systemic disease which might account for the clinical picture.

ECTOPIC KIDNEY WITH THE REPORT OF THREE CASES

BY ARTHUR H. CROSBIE, M.D., F.A.C.S.

I HAVE had three cases of sacral kidney, which is a rare condition. Up to a short time ago I had seen only one case, which I saw ten years ago when I was associated with Dr. Chute. He had a case of a left sacral kidney in a woman, which he has reported.

CASE I. Just a short time ago, in making a routine examination of a woman, my associate, Dr. H.

A. Chamberlain, found that when he made pyelograms, he got a good outline of the kidney on the left side, but didn't get any on the right. When we came to study the pyelogram we could see a faint shadow in the region of the pelvis. Then we passed a catheter up the right side and injected and found that we had a large sacral kidney.

This first case was a woman, 41 years old, who had born two children. She had had no bladder trouble during her pregnancy. Four years ago she had had some pelvic operation, an appendectomy, and had had an ovary removed. Apparently at that time no abnormality of the kidney was discovered. Four months before I saw her, she began to have pain in the abdomen, more marked on the right side. This was accompanied by chills and fever. When seen she was running a temperature at night up to 103, and having chills, with a great deal of pus in the urine. The urine from the left kidney was perfectly normal. The urine from the right side was thick with foul pus. Under drainage with a ureteral catheter in this sacral kidney on the right, her temperature at once came down to normal, and she felt very much better, but in a few days the chills and fever recommenced and she showed the same sort of condition. (Showing pyelogram of right kidney.) There is the right kidney lying in the pelvis. It was so large that I went in through the abdomen. I found the large tumor mass lying in the pelvis and opened the posterior peritoneum to shell it out. I was in hopes of getting the whole sac out without rupturing it, but I broke it, and there was a gush of a quart of very foul pus. I was afraid of general peritonitis, and had the table made flat. In the end I got part of the sac out after much bleeding. I had to back out, leaving some of the sac in. That was two months ago, and the patient now has a small rubber tube which drains very slightly. I think I will not go in to resect it but let her go as she is.

CASE II. Dr. Chamberlain, in making a pyelogram, at the Naval Hospital of a man who had pain in his back but whose urine did not show much, ran across this sacral kidney (showing plate). In this case the urine from the right kidney contained a few leukocytes, and what symptoms the man had were so slight that it didn't seem wise to do anything.

CASE III. I was over at the Naval Hospital and ran across this condition (showing plate), which I took to be a ptosed kidney, but I discovered it to be a real ectopic kidney. This man had definite colic on that side and his urine contained many leukocytes, while the urine from the other kidney was normal. I cut down on that kidney, expecting to free the ureter and do a nephropexy, or take the kidney out. When I got down to the kidney, I found there was a large artery and vein at the lower pole, which came from the common iliac, and above that another artery running across from the aorta, and above that the main pedicle. Any chance of moving the kidney was gone, so I removed it.

(Showing plate)—This shows the pelvis of the kidney divided into four branches. I have some photographs of the kidney, also the kidney itself in a jar. The pelvis was anterior; it had not been rotated.

DISCUSSION

DR. W. D. BIEBERBACH, Worcester. I recently had a case of tumor of the bladder that I operated upon. The patient died. At autopsy I found that he had a large sacral kidney which lay in its fatty capsule, transverse to the pelvis and with a short ureter, leading to a normal position in the bladder.

DR. R. F. O'NEIL: Dr. Crosbie's paper illustrates one point, and that is the difficulty of any operation on these ectopic kidneys except nephrectomy, on account of the anomalous blood supply.

I had a case of a stone in a sacral kidney and that I did with the extraperitoneal excision, and it was very difficult. By approaching it extraperitoneally, if you get into difficulties, you are much better off than with pus and urine floating around in the abdominal cavity.

DR. CHUTE: Almost everybody, years ago, spoke about the trouble these anomalous kidneys gave in parturition. Dr. Crosbie spoke of the lack of difficulty. I wonder whether it wasn't due to the fact that it was above the superior strait.

DR. CROSBIE: In the operation it went down into the pelvis as far as I could reach. That is the way it appears in the pyelogram, but at operation it was very low.

DR. CHUTE: It seemed to me that was the reason the patient got along so well in his labors.

WAS IT MALIGNANT?

A TUMOR OF THE BLADDER TREATED BY NON-OPERATIVE MEANS

BY JOHN H. CUNNINGHAM, M.D., F.A.C.S.

THE case report here recorded is one of a tumor of the bladder, believed to be carcinoma. As the diagnosis has depended entirely upon a visual interpretation through the cystoscope, there is reason for justified skepticism in regard to the correctness of our interpretation.

The features which characterized the tumor appear in the description of the cystoscopic examination, and I hope that individual opinion will be based upon these features, rather than the fact that the tumor has disappeared by treatment and has not reappeared for two years and seven months.

The patient is a small, spare man of 68 years of age, weighing 96 lbs., who was referred to me on October 20, 1922, by Dr. Augustus Riley, who held the opinion, from a cystoscopic examination, that the growth was a malignant, infiltrating carcinoma of the bladder, and because of the patient's general condition, radical surgery seemed out of the question. He considered the best course to be the employment of radium by non-operative means. The case was referred to me by him for this treatment.

The patient had complained of haematuria, off and on for about one year. He had been passing bloody urine almost constantly for a few months before consulting Dr. Riley. This feature was accentuated by automobile riding. The haematuria was painless. There were occasional clots. His frequency was increased at times, particularly during the past 3 or 4 months, the act occurring about every 2 hours during the day, and once or twice at night. During the past few months, he had lost three or four lbs. in weight, had become "worried and did not feel well." There was no past history, either general or local, having any bearing in the case.

The physical examination showed a small, frail man of 96 lbs. He was pale, but not cachectic. The general vitality appeared poor. The general physical examination was negative except that his heart

sounds were not strong and his blood pressure was low, 120/70. He voided 8 oz. of bloody urine. The external and deep genitals were normal. The abdomen was negative.

Cystoscopy revealed no obstruction in the urethral canal. The bladder capacity was 14 oz. The musculature was less pronounced than normal and the mucosa showed a low-grade cystitis. Both ureteral orifices were normal. Located about $\frac{1}{2}$ inch above the left ureteral orifice, was a sessile tumor, elevated about 1 cm. and about 2 cm. in diameter, ulcerated, necrotic and with a definite infiltrating border.

At a later date I learned that this patient had been cystoscoped by Dr. G. G. Smith, who also held the opinion that the tumor was carcinoma.

I agreed with Dr. Riley that the patient's general condition was such that radical surgery was not advisable at the time and we decided upon a non-operative program. A summary of the treatment is as follows:

October 20, 1922: At the time the tumor was discovered, it was thoroughly fulgurated.

October 30, 1922: Cystoscopy showed little change in the growth except increased slough, but the bleeding had subsided. Radium with device here illustrated was introduced into the growth through the cystoscope. Amount of radiation, 25 mg. hrs.

November 1, 1922: Screened radium in rectum, located beneath the growth. Amount of radiation, 100 mg. hrs.

November 3, 1922: The same.

November 6, 1922: The same.

November 8, 1922: The same.

November 10, 1922: (21 days after beginning treatment.) Cystoscopy showed growth little changed. Radium (special instrument) introduced into growth. Amount of radiation, 25 mg. hrs.

December 1, 1922: (42 days after beginning treatment.) Cystoscopy: Growth considerably smaller. Radium, (special instrument) introduced. 25 mg. hrs.

December 5, 1922: Screened radium in rectum. Amount of radiation, 100 mg. hrs.

December 12, 1922: The same.

December 15, 1922: The same.

December 19, 1922: The same.

December 26, 1922: The same.

January 2, 1923: (74 days after beginning treatment.) Cystoscopy: Growth about $\frac{1}{4}$ original size. Radium special instrument, in growth. Amt. of radiation, 25 mg. hrs.

January 17, 1923: Cystoscopy: Growth smaller than on January 2, 1923. Radium (special instrument) introduced into growth. Amount of radiation, 25 mg. hrs.

February 12, 1923: (115 days after beginning treatment.) Area noted January 17, 1923, gone. Area observed to be flat with adherent fibrin. Again fulgurated. Patient has had no haematuria since first fulguration, October 20, 1922, and has gained 4 lbs.

June 21, 1923: (153 days after beginning treatment.) Cystoscopy shows only scar in the location formerly occupied by tumor. General condition greatly improved. Has gained 5 lbs. since February 12.

September 12, 1923: (93 days after noting tumor to be entirely absent.) Cystoscopy: Bladder capacity 12 oz. Good tone. Bladder clear except small excrescences in mucous membrane. Area slightly elevated, size of split pea, suggesting area of growth. Located outer edge of scar in former site of tumor. No symptoms. This area fulgurated.

December 12, 1923: (90 days after noting small recurrence.) Cystoscopy: Bladder negative except for scar. Urine that of a mild cystitis. No symptoms.

February 19, 1924: (67 days after noting disappearance of first recurrence.) No symptoms. Cystoscopy, however, shows a nodular indurated tumor at the inner border of the scar area, formerly occupied by tumor. Believed to be recurrence. This area about the size of a small green pea. Patient has had no symptoms. Area fulgurated.

April 8, 1924: Cystoscopy shows small slough in the indurated area noted on February 19, 1924, which was believed to be tumor and which was fulgurated.

June 3, 1924: (104 days after noting second recurrence.) Bladder negative except for scar. No symptoms. Urine only slightly hazy. Urinalysis that of a very mild cystitis.

September 4, 1924: Cystoscopy negative except for scar.

December 10, 1924: Bladder negative except for scar.

Patient was cystoscoped at intervals of three months during the year 1925. Nothing but the scar in the region previously occupied by the tumor was observed and patient was free from symptoms.

During 1926, patient was cystoscoped June 30th. Bladder was negative. No symptoms. Urine slightly cloudy; that of a low-grade cystitis.

December 9, 1926: five days ago, cystoscopy was negative. Weight 110 lbs. Patient is without symptoms. Urinalysis shows a trace of albumen and a few white cells. It is otherwise negative. He will be 73 years of age next month. He continues to spend a full day at his business and feels well.

Reviewing the course of the disappearance of the tumor under treatment, it is noted that the tumor had received 125 mg. hrs. of radium by needles introduced into the tumor through the cystoscope, and 900 mg. hrs. of screened radium, applied beneath the tumor through the rectum. There had been 2 treatments by fulguration. Cystoscopy 153 days after beginning treatment showed only scar in the region previously occupied by the tumor.

There were two recurrences. The first was noted 93 days after the tumor was first noted as absent. The recurrence appeared at the site of the original tumor, was about the size of a split pea, and was fulgurated. Cystoscopy 90 days later showed recurrence absent. The second recurrence was discovered 67 days after noting the disappearance of the first recurrence. It appeared as a nodule the size of a small green pea at the inner border of the old tumor area. This was fulgurated. Cystoscopy 104 days later showed recurrence absent.

Since June 3, 1924, repeated cystoscopic examinations have shown entire absence of tumor and no further recurrence in a period of 2 years and 7 months.

The reason that I chose this case to report before this gathering is because curing such a tumor by the application of radium, intravesically, by non-operative means and through the rectum, together with fulguration, is unusual;

that is, provided we are correct in our assumption that the tumor was malignant.

To confirm my impressions in regard to the fact that this tumor was malignant, we have the opinion of Dr. Riley and Dr. Smith. Both of these gentlemen cystoscoped the patient before I gave any treatment and both believed the tumor to be carcinoma.

I shall always consider this tumor was malignant, as it had all the physical characteristics of such a growth by cystoscopic examination. I am naturally glad, however, to have Dr. Riley and Dr. Smith to corroborate me.

The device employed to implant the radium into the tumor I had made for the purpose of implanting radium needles into the benign growths which are resistant to fulguration and into the small malignant growths which appear as recurrences following bladder resection, also occasionally into growths where an operation is inadvisable for any reason, as in the case of the patient just referred to. This method, combined with the application of screened radium beneath the growth via the rectum has been of value in treating some of our patients. Whether this device and method is preferable to the implantation of radium seeds into the tumor, through the cystoscope, is, of course, a matter for debate. Personally, I feel it makes little difference so long as the tumor gets sufficient radiation from within the growth.



FIGURE 1. Two radium needles screwed into metal block, mounted on flexible shaft.

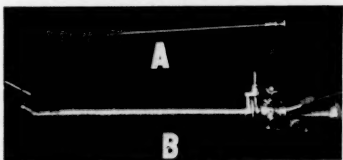


FIGURE 2. Flexible shaft with radium needles introduced through ordinary cystoscope.



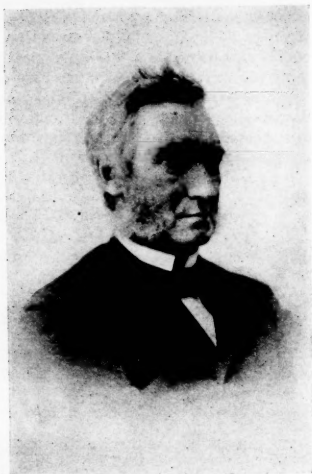
FIGURE 3. Radium needles introduced into tumor.

ORIGINAL ARTICLES

PETER LUDVIG PANUM

Born 19th December 1820—Died 2nd May 1885

PETER LUDVIG PANUM, whose father was a military surgeon, was born at Ronne (Isle of Bornholm); his father was however transferred to Schleswig-Holstein, and his early boyhood was spent at Rendsburg and Eckernförde. He received his early education at Felsborg Grammar School, and, after passing his final examination at the school, matriculated at the University of Copenhagen in 1840. He studied medicine



PETER LUDVIG PANUM

and qualified in 1845. The hospital training he then entered upon was interrupted for some time in 1846, when he was sent by the Medical Board to the Faroe Islands, where there was at that time a violent epidemic of measles. (His experiences were recorded in *Virchow's Archiv*, Vol. 1, 1847.) In 1848 his hospital training was again interrupted when he took part in the Danish-German war as a surgeon in the Danish Navy (1848-49). In 1850 he took his share in combating the cholera epidemic, at Bandholm (Isle of Lolland) and Korsør. He acquired his medical degree in 1851 by a thesis entitled "*Om Fibrinen i Almindelighed og dens Koagulation i Særdeleshed*" ("A general study on the fibrin with a special view to its coagulation"). During the period 1851-53 he studied abroad, in Germany and France, and in 1853 he was appointed to the Professorship of Physiology, Medical Chemistry, and General Pathology at

the University of Kiel (then Danish), where he remained until the spring of 1864 when he was appointed Professor of Physiology, Physiological Chemistry, and Comparative Anatomy at the University of Copenhagen. He held this position until his death at Copenhagen on May 2, 1885 (ruptura cordis).

Peter Ludvig Panum was a pioneer; he was the first physiologist, in the modern sense of the word, in the Scandinavian countries.

He was a keen champion of the justification of vivisection and its necessity for the development and progress of physiology and medical science. He published a polemical pamphlet on this question in 1879 entitled "*Dyrplageri ved Dyrenes Benyttelse og Menneskeplageri ved Dyrenes Beskyttelse*" ("Cruelty to animals by the utilization of animals, and cruelty to man by the protection of animals"). On the other hand, he was a lover of animals, working, amongst other things, for the introduction of more humane methods in slaughterhouses.

Panum was not a one-sided theorist; he always aimed at establishing as close a connection as possible between physiology and practical medicine. This was his strength both as a scientist and as a university teacher.

His first scientific publications were devoted to physiological chemistry (serum casein and fibrin).

While at Kiel he worked at various subjects: the physiology and pathology of the circulation (embolism, transfusion, and blood volume); physiological optics (binocular vision); and experimental embryology (the formation of monsters).

At Copenhagen he was interested in the physiology of respiration (1865-66), and afterwards, for a series of years, in the chemistry of metabolism, nutrition, and the foodstuffs, continuing however, in the meanwhile, his work on transfusion and the formation of monsters. During the years 1874-78 he published papers on putrid poison, bacteria and putrid infection.

Panum was a conscientious and keen university teacher. During the period 1865-72 he published his "*Handbook of the Physiology of Man*," in two volumes. He worked for a reform of medical training and advocated an extended course of practical medicine.

Panum was in favor of coöperation between the universities of Scandinavia and also aimed at establishing a closer connection between the medical science of Denmark (Norway and Sweden) and that of other countries. As Danish scientific literature was at that time quite unknown abroad, he had most of his own works

published in German, and in 1867 he made an arrangement with the *Virchow-Hirsch' Jahresbericht*, according to which extensive reports of Scandinavian medical literature were published annually in this periodical.

The third International Medical Congress held at Copenhagen in 1884, (when Pasteur published his investigations upon antirabic vaccination) of which he was chief organizer and of which he was president, must also be considered as a link in his aims at establishing international coöperation between men of science.

By popular writings and newspaper articles Panum showed his interest for various questions concerning the people's food, such as for instance the supply of wholesome milk to Copenhagen, the utilization of animal blood in the food, the baking of bread, dietary regulations, etc., etc.

In his later years Panum was highly interested in the history of medical science; he published a series of works on the history of medicine and physiology in Denmark, especially in the seventeenth and eighteenth centuries.

A complete enumeration of Peter Ludvig Panum's literary work is not within our scope here.

It has been mentioned that his experiences from the measles epidemic in the Faroe Islands

were published in *Virchow's Archiv*, Vol. I, 1847.

Numerous papers of his are to be found in "*Virchow's Archiv*," "*Pflüger's Archiv*," "*Ugeskrift for Læger*," and "*Nordisk medicinsk Archiv*."

Besides the above mentioned "Handbook of the Physiology of Man" the following works were issued in book form:

Experimentelle Beiträge zur Physiologie und Pathologie der Embolie, Transfusion und Blutmenge. Berlin, 1864.

Untersuchungen über die Missbildungen. Berlin, 1860.

Physiologische Untersuchungen über das Sehen mit zwei Augen. Kiel, 1858.

Bidrag til Bedømmelsen af Fodemidlernes Næringsværdi. København, 1866.

(Contribution to an estimate of the nutritive value of the foodstuffs.)

THORVALD MADSEN.

Copenhagen, February, 1927.

Dr. M. J. Rosenau says of Dr. Panum: "It might be of added interest to state that diligent research has failed to find in the archives anything satisfactory about Panum and his life's work. He was one of the giants of medical renaissance, and his contributions had been notable; in fact, he made a deep impress in many fields of medicine."

MEDICAL PROGRESS

PROGRESS OF ORTHOPEDIC SURGERY

BY RALPH K. GHORMLEY, M.D.

IN this review we have attempted to cover the literature of the past three years. The great amount of work published can only be briefly covered, and in the following we have only attempted to select the most important papers and review them. Needless to say, much important material has been omitted.

ARTHRITIS

Arthritis continues to be one of our greatest problems. It is not only a problem of orthopedics, but of the general medical man as well. Much of the work quoted below comes from the latter group, but because of its importance and its interest to orthopedists it is quoted here. Little change has taken place in the classification fortunately, as we are already overburdened with nomenclature. It is certain that more cases are being relieved by the various means quoted, and, little by little, there is improvement in our knowledge of the disease itself, and of how to handle the cases.

Burbank, R., and Hadjopoulos, L. G., (*J. A. M. A.*, Vol. 84, No. 9, Feb. 28, 1925) by working

out a series of antigens and using these for complement fixation tests have grouped their cases of arthritis as follows:

(a) Those reacting to hemolytic streptococci and belonging to the "iso-atrophic" class. This type in pure form is periarticular.

(b) Arthritis reacting similarly to hemolytic streptococci, but of different fixing properties. This type is deformans.

(c) Arthritis reacting to streptococci of the *S. viridans* type, and belonging to the osteoarthritic or productive form.

They believe that many types later become mixed, both as to their pathological, as well as serological manifestations.

As a test they say this method is not diagnostic for arthritis alone, but for a wide group of acute and chronic infections.

Cecil, R. L., and Archer, P. H., (*J. A. M. A.*, Vol. 84, No. 2, Jan. 10, 1925) describe a type of arthritis coming on in women just past the menopause, which they call arthritis of the menopause. The essential features are the menopause followed by painful joints, particularly

the knees and hands. Over-weight is common, and is accompanied by poor posture. Their treatment consisted in low carbohydrate diet to reduce weight, physiotherapy, particularly local heat, iodides and endocrine therapy. They feel that vaccines and colonic irrigations were of little or no benefit in their cases.

In a later paper (*J. A. M. A.*, Vol. 87, No. 10, Sept. 4, 1926) the same authors give a summary of their observations in 612 cases of arthritis. They divide these cases into proliferative and degenerative types, of which two thirds belong to the former, and one third to the latter. The infectious type they hold to be due to focal infections, and treat by removal of foci, vaccine therapy, and physiotherapy. By far the largest part of the group of degenerative arthritis they call arthritis of the menopause. In the degenerative group their treatment consists in accelerating metabolism, the use of iodides, and physiotherapy.

Pemberton, Ralph Cajori, F. A., and Crouter, C. Y., (*J. A. M. A.*, Vol. 85, No. 23, Dec. 5, 1925; Vol. 87, No. 26, Dec. 25, 1926; Vol. 87, No. 16, Oct. 16, 1926) working on the influence of focal infection have shown that there is a lowered sugar tolerance in 60% of the cases of infectious arthritis, due to a delayed removal of sugar from the blood. By altering the flow of blood to the limbs in cases with normal sugar tolerance they have been able to produce a lowered tolerance. They feel that part of the cause, if not all, is due to a delay in the circulation in the limbs, and specially in the finer capillaries of the limbs. By the use of nitrites they have been able, therefore, to restore toward normal the sugar tolerance to these cases.

Young, A. G., and Youmans, J. B., (*J. A. M. A.*, Vol. 87, No. 110, Sept. 4, 1926) report their results in 46 cases treated with o-iodoxybenzoic acid. They report 56% of the cases markedly improved, 23% moderately improved, and 14% slightly improved, with 7% failure. The drug has been known for many years. Experimental work has been carried on with it, and its toxicity and pathology studied. Their method consists in intravenous injections of 1 gram of the drug at bi-weekly intervals, up to six or eight injections. In some cases two courses were carried out with an interval of six weeks.

They have treated so-called infectious types largely, and say that improvement is more marked in cases where the disease is more acute and active. They advocate removal of foci, and orthopedic measures, in addition to the use of the drug, and wisely reserve final opinion until more extended use has shown its real value.

Swaim, L. T., (*J. Bone and Joint Surg.*, July, 1924) stresses the importance of improving general bodily function in cases of arthritis. He feels that much harm can come from ill-advised removal of questionable foci.

Campbell, D., (*Glasgow Medical Jour.*, 21-75-143, Feb., 1925) using typhoid vaccine reports improvement in 58 cases. Of these, 40 remained better over two years, and continued to carry on with no exacerbations.

Todd, Alan H., (*British Journal Surg.*, Oct., 1926) in an Hunterian lecture, describes the various types of true syphilitic arthritis. He says, "It is a protean condition. There can be no such thing as a typical word picture of syphilitic arthritis." He divides the conditions as follows:

Arthritis in congenital syphilis.

Parrot's Syphilitic Osteochondritis.

Clutton's Joints—Symmetrical hydrarthrosis occurring in children of 8 to 16 years.

Earlier forms of syphilitic arthritis in adults.

Arthralgia.

Hydrarthrosis.

(1) Transient hydrarthrosis.

(2) A later and more persistent form.

The Plastic form.

Tertiary Syphilitic Arthritis.

Gummatous arthritis.

The Synovial form.

The Osseous form.

A Pseudo-Rheumatic form.

The Pseudo-Rheumatoid form.

He discusses the general diagnosis, history, etc. He stresses the importance of the Wassermann reaction both on the blood and on the joint fluid, as it may be negative in the former, and positive in the latter. In discussing treatment, he says that the results of anti-syphilitic treatment in the late stages are on the whole disappointing, hence the importance of earlier and better diagnoses.

The paper is an excellent summary of the condition presented, and in addition, possesses an extensive bibliography.

Osgood, R. B., (*J. Bone and Joint Surg.*, Jan. 1926) in the Hugh Owen Thomas Lecture of 1925 discusses the orthopedic aspects of chronic arthritis. He has thoroughly reviewed the history of this condition, with its various classifications, and discusses its treatment both medical and surgical. He feels that in the rheumatoid form many organisms may be responsible. On the other hand, in osteoarthritis no organism has been found responsible for its causation. In both conditions corrections of faulty body mechanics is important.

Magnuson, Paul (*J. Bone and Joint Surg.*, Oct., 1926) believes that 25 to 30 per cent of the cases of arthritis are due to high protein intake. He bases his conclusion on a study of 100 cases improved by low protein intake.

Swaim, L. T. (*J. Bone and Joint Surg.*, Oct., 1926) feels that the practical treatment of chronic arthritis should be based on the restoration, first, of normal physiology and resistance,

and, second, of normal joint motion. Chronic fatigue is an important factor in arthritis, as evidenced by vasomotor instability, low blood pressure, lowered basal metabolism, and poor muscle tone. He describes rest in bed, with special positions and exercises to improve the function of the viscera, steam baths (Wilde), sunlight, and fresh air.

Locally prevention of deformity in the joints early, with later restoration of use, if possible by exercises and occupational therapy.

TUBERCULOSIS

There is no doubt of the decrease in the incidence of tuberculosis. This is more true even of bone and joint tuberculosis, yet it remains that a fair share of our work is with these cases. The two forms of treatment—radical (operative) and conservative (heliotherapy, etc.)—each have their strong exponents, with a large group who believe that both methods have their place and are useful.

Keonig, F., (*Roentgen-beobachten an Tuberkulösen Gelenken Zentralbl. f. Chir.*, 1924, Li. IV) in a study of 112 roentgenograms of the six large joints, points out that tuberculosis characteristic of a joint involvement is suggested by round, bony defects at the site of insertion of the joint ligaments, and also defects at the insertion of the capsule. Atrophy is usually present, but not essential. There were bony proliferations in 10% of his cases. Sequestra were rare. He does not state whether or not these cases were all proven joint tuberculosis.

Waldenstroem, H. (*Acta Chirurgica Scand.*, l. VI, 463, 1924) reviews eighty cases of tuberculosis of the spine treated over ten years. He advocates (a) gradual and complete correction of the kyphosis by application of pressures while the patient is lying on his back in a Lorenz plaster bed. (b) Fixation, or the corrected disease by Albee graft. He advocates operation only if two or more vertebrae are infected, believing that such cases may heal satisfactorily under conservative treatment. He feels that children under five should not be operated, and that debilitation or fistulae contraindicate operation.

Girdlestone, G. R., (*Brit. M. J.*, 1:1044, June 12, 1924) in a thorough discussion of the modern treatment of bone and joint tuberculosis, points out the importance of sunlight and air, particularly with reference to heliotherapy at low altitudes. He feels that the essentials of treatment are:

- (1) Uninterrupted rest during active disease.
- (2) Comparative immobilization during the stage of healing.
- (3) Free use under careful supervision after healing. Operation, he says, is seldom warranted under sixteen years of age.

Phemister, D. B. (*Am. J. Roentgenol.*, 1924,

XII, 1; *Annals of Surgery*, Oct., 1924) compares the changes in tuberculosis and pyogenic joints and points out particularly that proteolytic ferments present in pyogenic joints destroy the cartilage, whereas in tuberculous joints the tuberculous pus does not digest the cartilage, but it is destroyed by granulation tissue invading the joints from the margins, and growing beneath and above the cartilage. Thus, in pyogenic joints the cartilage may be destroyed early as points of contact, whereas in tuberculous joints it often remains longest at these points.

Smith-Petersen, M. N., and Rogers, W. A. (*J. A. M. A.*, Jan. 2, 1926, Vol. 86, No. 1, p. 2) report on thirteen cases of tuberculosis of the sacroiliac joint treated by operation. They give in tabular form a summary of the symptoms, history and physical finding in these cases. The operative procedure is well illustrated, and the end results tabulated as follows:

Complete recovery	46%
Partial recovery	23%
Death	31%

Smith, A. D., (*J. A. M. A.*, 83, 1569, Nov. 15, 1924) emphasizes the importance of positive diagnosis in joint tuberculosis, such diagnosis to be made by removal of tissue if aspiration does not suffice.

Allison, Nathaniel (*J. A. M. A.*, 83, 750, Sept. 6, 1924) writing on tuberculosis of the knee, emphasizes the importance of a positive diagnosis, and feels that it is essential for those who attempt to estimate the value of therapeutic measures, such as heliotherapy, to have a positive diagnosis in their statistical studies.

Heliotherapy (Logrosso, *J. Bone and Joint Surg.*, Oct., 1924) (Kish, E., *Deutsche Med. Wchnschr.*, 50:668, June 23, 1924) (Sevier, *J. A. M. A.*, Sept., 1925) has been much quoted in the literature, but no essential advances in our knowledge of its specific action have been brought forth. As substitutes for heliotherapy, the various artificial lights have been used, the most success apparently being demonstrated by the use of the carbon arc lamp.

Finikoff, A., (*La Presse Medicale*, 1925, No. 99, 1634) claims to have shown marked improvement in cases of tuberculosis by the use of intra muscular injections of iodized vegetable oils, and the administration of calcium salts. In support of the treatment, Delbet, P. (*Bull. d. l'Acad. de Med.*, 1925, 94, 1083) reports marked improvement in one hopeless case of tuberculosis, healing in five severe cases, and healing in six other less severe cases in a few months.

Hibbs, L. A., and Von Lackum, H. A., (*J. A. M. A.*, Oct. 23, 1925) conclude that it is doubtful whether any case of knee joint tuberculosis can be cured with mobility, and that conservative measures are inadequate, and that elimination of motion by early fusion operation offers the only means of curing the disease.

SURGERY OF THE HIP

The increase in the belief that open operation is indicated in congenital dislocations of the hip seems to be a decided change. Legg's late results on his old cases are very instructive. The more or less standard treatment agreed on below in cases of epiphyseal displacement is important.

Key, J. A., (*J. Bone and Joint Surg.*, Jan., 1926) gives an exhaustive discussion of the subject of coxa vara with a detailed account of the incidence, pathology, and treatment of epiphyseal coxa vara from a study of 24 cases at the Massachusetts General Hospital. His conclusions are that the cause of this condition is a weakening of the periosteum binding the head to the neck of the femur. The cause of this weakening is unknown, but it is usually coincident with a period of unusually rapid growth during adolescence.

From the standpoint of treatment, he divides the cases into five groups as follows:

1. Cases without displacement—protection by use of splint and diet, if over-weight. No glandular therapy unless indicated.

2. Early cases where the epiphysis has just begun to slip should be manipulated after the manner of Whitman, and placed in a spica, this to be worn ten weeks, followed by physiotherapy.

3. Advanced cases where the head has slipped completely, but still retains its shape. In these cases he advocates open replacement of the epiphysis. After treatment as in group 2.

4. Healed cases in young adults with markedly deformed head and neck. In these he advises osteotomy, preferably in the intertrochanteric region to improve abduction.

5. Older patients with arthritic changes. In these he prefers conservative measures, rest, physiotherapy, and support. If this fails, osteotomy may relieve to some extent.

Yount, C. C., (*J. Bone and Joint Surg.*, Jan. 1926) has analyzed the hip flexion deformities, and the frequently associated flexion deformity of the knee, and knock-knee. He finds the tensor fascia femoris with the iliotibial band the most important deforming element. He advocates the division of the iliotibial band either subcutaneously or by open incision. At times division of the biceps tendon should be added. In certain cases, the iliotibial band with its tendons may be substituted as extensors of the knee joint.

Galloway, H. P. H., (*J. Bone and Joint Surg.*, July, 1926) reports the results in his cases of congenital dislocation of the hip treated by open operation. A series of 38 cases was reported in June, 1920, and the subsequent study of these cases showed 16 cured, and 15 good results, and 7 failures. Since 1920, the same number, 38, have been operated with results as follows: 15 cured, 18 good results, 5 doubtful. These cases

have varied in age from seventeen months to 29 years.

Farrell, B. P., Von Lackum, H. L., and Smith, A. D., (*J. Bone and Joint Surg.*, July, 1926) have analyzed the results in 310 cases of congenital dislocation of the hip treated at the New York Orthopedic Hospital. Only four of these cases were subjected to open operation. All of these remained reduced and are stable, 3 with limitation of motion. Of the cases treated by closed manipulation either with or without the Hibbs table, 39% remained in place with good functional result. An additional 15% were in anterior transposition with fairly good functional result.

The reasons for failures they sum up as age, anteversion not corrected, bony abnormalities, and contracture of the cotyloid ligament. They conclude that a much larger number of cases should be treated by open operation.

Legg, A. T., (*J. Bone and Joint Surg.*, Jan., 1927) has gathered together forty cases of coxa plana, and summarized them as an end result study. He describes these end results with relation to the two types, the "mushroom" type, and the "cap" type. The former cases show no marked atrophy or fragmentation of the epiphysis. The motion may be limited if emigration is extensive, but often is not limited in adult life where emigration is slight. There is less shortening. The late results in the "cap" type, on the other hand, show much more limitation of motion and shortening. He feels that it is possible to prognosticate the end result in many cases.

Wilson, P. D., (*J. A. M. A.*, 1924, XXXIII, 1749) reports seven cases of displaced femoral epiphyses treated by open operation. In four of these the epiphysis could be replaced by means of a skid. In these older cases osteotomy of the neck was necessary. Ten weeks in plaster followed by Thomas caliper brace was the after treatment. Full weight bearing was allowed in six to nine months. Six of the cases had practically normal motion with 90° flexion. One case had only 45° flexion.

Hey Groves, E. W., (*Brit. Jour. Surg.*, Oct. 1925) in an excellent monograph, summarizes the present state of knowledge in reconstruction surgery of the hip. He takes up the questions of fracture, both recent and old, non union, ankylosis, congenital dislocation, and the affections resulting from infantile paralysis. In the latter he offers a new procedure, a combination of the Legg and Kreuscher operations. He strips the fascis lata from the knee up to the trochanter, passes it through a tunnel at the base of the trochanter, and passes it subcutaneously to the attachment of the erector spinae muscle at the ilium. He does not free the erector spinae muscle. The article is beautifully illustrated, and would well serve as a text on useful surgery of the hip joint.

Albee, F. H. (*J. A. M. A.*, Oct. 31, 1925) presents three operative procedures on the hip.

(a) Splitting the trochanter and placing the neck in the acetabulum in ununited fractures.

(b) A procedure for congenital hips making a shelf from two grafts from the ilium.

(c) A stabilizing operation for tuberculous hips, using two long tibial grafts placed as buttresses between the trochanter and the ilium.

THE SPINE

The origin of the cases of so called "vertebral epiphysitis" or "osteochondritis" has promoted much discussion. The more frequent observation of these conditions, particularly when associated with the disturbances in the hip known as Legg's Disease, etc., has led to a pretty general feeling that they are due to the same basic cause, but no explanation as to what this cause is has come to light.

Buchman, Joseph, (*J. Bone and Joint Surg.*, July, 1925) gives the name "vertebral epiphysitis" to a condition affecting the spines of adolescents, between the ages of ten and twenty, often causing a round back deformity, due to changes in the shape of the vertebra. He says there is evidence that the condition is a low grade infection, also that it is analogous to Legg's Disease, Osgood-Schlatter's, Köhler's disease, etc., all of which he groups as multiple epiphysitis of adolescence.

Mathieu, Mascart, and Dueroquet (*Bull. et Mem. de la Soc. Nat. de Chir.*, Feb., 1925) describe eight cases of vertebral epiphysitis of adolescence. They feel that the epiphyses in these cases appear earlier than usual, and that they are in some ways similar to rickets.

Under the title "Osteochondritis, or Epiphysitis," Christie (*J. A. M. A.*, July 31, 1926) reviews in an admirable way the subject of epiphyseal affections, Köhler's disease, Legg's disease, Osgood-Schlatter's disease, vertebral epiphysitis, etc.

Blaine's (*J. A. M. A.*, Oct. 31, 1925) paper on chiropractic dislocations of the atlas, and the discussion following it is an important contribution, and should be part of the armamentarium of every legislative committee dealing with the chiropractic situation.

Lovett, R. W., and Brewster, A. H., (*J. Bone and Joint Surg.*, VI, 847, 1924) have devised a jacket, hinged at the apex of the scoliotic curve, split across the middle, and with a turnbuckle opposite the hinge. With this device they have been able to completely correct cases of scoliosis in the dorsolumbar region. Their report is preliminary.

Hanson, R., (*Acta Radiol.*, 1926, v. 112) has studied the development of the human vertebrae from late foetal life up to the age of two years, by means of lateral roentgenograms. He states that these vertebrae develop from three plates, one upper, one lower, and a middle. There is a

conical defect in the middle due to a vein. This disappears during the second year of life, except in the lower dorsal and upper lumbar vertebrae. A staircase-like appearance in the corners appears in some persons. He believes this may be the foundation of kyphos in some persons.

SACROILIAC AND LUMBOSACRAL SPINE

Smith-Petersen, M. L., and Rogers, W. A., (*J. Bone and Joint Surg.*, Jan., 1926) discuss the diagnosis and treatment of traumatic arthritis of the sacroiliac joint. They have analyzed their 26 cases as to history and symptoms, both of which are set down in tabular form. The treatment has been the fusing operation, devised by one of the authors. In the 26 cases their results are as follows:

Complete recovery	84.6%
Partial recovery	7 %
Failures	7 %

From this they conclude that their diagnosis as well as their treatment is correct.

Painter, Charles F., (*BOSTON M. AND S. JOUR.*, April 8, 1926) has given a thorough review of the literature leading up to the establishment of the idea that there is motion in the sacroiliac articulation. He discusses the lesions affecting this articulation. These he feels are primarily traumatic, and of the inflammatory lesions he feels that there are practically only two, tuberculous, and juxta-articular osteomyelitis.

As to treatment, his plea is for the conservative type, as he feels that the majority of cases will heal by conservative or manipulative measures; that the same amount of time in spica fixation as in operative and post operative measures will result in healing. He says that operative interference should never be undertaken until prolonged spica fixation has been tried.

Verrall, P. Jensen, (*J. Bone and Joint Surg.*, July, 1926) describes an operation for the fixation of the sacro-iliac joints. It consists of a long tibial graft through both posterior superior spines and across the second sacral spinous process. He has used the operation four times. Two of these were excellent results, but it was too soon to report on the other cases.

Von Lackum, H. L., (*J. A. M. A.*, April 5, 1924) attributes much of the so called low backache to the variations in the fifth lumbar and its angle with the sacrum. He advocates fusion of this area as a relief from pain.

Lowman, C. L., (*J. A. M. A.*, Sept. 25, 1926) describes again the iliolumbar ligaments, and analyzes their role in low back pain.

POLIOMYELITIS

What is new in poliomyelitis from the orthopedic standpoint is chiefly in the operative work, quoted under miscellaneous and operations. The work below deals with epidemiology and the acute phase. That is as it should be, for there

is the great need, prevention of the disease if possible.

Aycock, W. L., (*J. A. M. A.*, July 10, 1926) calls attention to the fact that only about 5% of cases of poliomyelitis can be ascribed to direct contact. Multiple cases in families probably represent simultaneous infection. That is explained in part by the abortive cases and carriers. From his study, he suggests that paralytic poliomyelitis is not infrequently transmitted from person to person, but not usually through direct contact or carriers, but by some indirect means.

Shaw, Thelander, and Fleischner (*J. A. M. A.*, Nov. 14, 1925) report five cases of acute poliomyelitis treated by intramuscular injections of immune serum with favorable results.

Diveley, R. L., (*J. A. M. A.*, Jan. 10, 1925) in a study of the 1923 epidemic in Kansas, concludes that if proper treatment is carried out in the "first and second stages, 90% of the deformed limbs and backs can be prevented."

Montgomery, J. C., and Cole, W. R. C., (*J. A. M. A.*, Sept. 19, 1925) review the subject of acute poliomyelitis, its clinical and laboratory findings, and report encouraging results from early spinal drainage.

From abroad (Bergamini, M., *Arch. de Med. des Enfants*, Paris, Sept., 1923) come reports of improvement by the use of X-ray therapy and diathermy in poliomyelitis.

SPASTIC PARALYSIS

Nothing in the realm of orthopedics has produced more effort and discussion in the past three years than the work of Royle, Norman D., and Hunter, John. (*Surg., Gyn. and Obs.*, Dec., 1924). A combined anatomical and experimental study of the innervation of muscles brought out that tonus of muscles was composed of plastic tone and contractile tone. In spastic paralysis showing the former, they have removed the gray rami communicantes thus throwing out the plastic tonus. They felt that, in selected cases there was much improvement in the control of the limbs, and a decrease in their rigidity. Their visit in this country has produced a considerable amount of work, both in the laboratory, and in the clinic. Conflicting reports as to its value come from the clinicians. However, from the experimental workers (Davis, Loyal, and Kanavel, Allen B., *J. A. M. A.*, June 19, 1926) (Cobb, Stanley, *Physiological Review*, Oct., 1925) there is direct contradiction that Royle and Hunter have based their conclusions on sound experimental fact. Clinical observations have been very unsatisfactory. It is probably too soon for a final estimation.

OPERATIONS

Reich, R. S., (*J. Bone and Joint Surg.*, July, 1925) reports favorable results from the Lorenz

bifurcation operation in irreducible dislocations of the hip. The procedure consists in an oblique osteotomy of the femur below the trochanter, the upper end of the distal fragment being inserted into the acetabulum. He claims that it restored the antero-posterior equilibrium, that the patients have 75° to 90° motion, and that the operation is simple.

Bennett, Geo. E. (*Archives of Surg.*, Nov., 1926) in treating relaxed joints incident to trauma, describes his technique in the knee and shoulder joints. It consists of reinforcement with strips of fascia, after the manner of Gallie, with or without plication of the capsule. He reports ten cases so treated, all with satisfactory results.

Gallie, W. E., and LeMesurier, A. B., (*Brit. Jour. Surg.*, Oct., 1924) in an Hunterian lecture describe in detail the gross and microscopic changes which take place in the transplantation of fibrous tissue to repair anatomical defects. They then describe its clinical application in the following conditions; injuries to tendons, injuries to ligaments, certain ununited fractures, paralytic deformities, facial paralysis, ptosis of the viscera, and hernia. This paper, coming from the source of the work on so called "living suture," should take its place as one of the classics in surgery, and is well worth reading by all surgeons.

Kreuscher, Philip H., (*Surg., Gyn. Obs.*, May, 1925) describes an operation for the substitution of the paralyzed gluteal muscles. Using the outer portion of the erector spinae group, he passes silk ligaments from this to the trochanter. One case reported was much benefited by the operation.

Hibbs, Russell A., (*J. Bone and Joint Surg.*, July, 1926) describes a new operation for tuberculosis of the hip. The incision begins two inches behind the anterior superior spine, is carried down over the great trochanter three inches along the shaft of the femur. The capsule is split, and the superior aspect of neck denuded of cortex. A mass of the ilium and upper rim of the acetabulum is elevated, and the trochanter transposed by bringing its lower end up along the neck and under the elevated piece of the ilium. He has used the operation in twenty cases, of which 18, or 90%, are definitely fused. He makes no attempt to correct existing deformity, but leaves that for a later operation.

Dickson, Frank D., (*J. Bone and Joint Surg.*, Jan., 1927) describes a new operation for the stabilization of paralytic hips. Through a right angled incision from the posterior superior spine to the anterior superior spine, then downward along the border of the tensor fascia femoris, the tensor fascia femoris is freed from its iliac attachment and carried under the gluteus medius to be attached to the ileum near the posterior superior spine. No case reports are giv-

en. The author states that he has used it five years, and will report his results later.

The growing importance of fascia as a means of repair in orthopedic surgery is a distinct advance. Gallie and LeMesurier have reviewed the whole subject in their article. Hibbs new hip operation in his clinic has shown excellent results. It remains to be seen what results will be obtained by others. The bifurcation operation of Lorenz has so far not been well accepted in this country.

MISCELLANEOUS

Of particular interest in the following group are the references to synovectomy. This operation seems to be growing in favor with increasingly good results. Under "experimental," the work of Key and Wolcott demonstrating the regeneration of the synovial membrane should add much to the evidence in favor of the operation.

Henderson, M. P., (*J. Bone and Joint Surg.*, July, 1926) calls attention to a chronic osteitis of the semilunar bone, described by Kienböck, probably the result of trauma, and reports two cases.

Sever, J. W. (*J. A. M. A.*, Dec. 12, 1925) reviews eleven hundred cases of obstetrical paralysis, and his review is worthy of study. He concludes that early observation and treatment over a period of years will result in many less operations and better results. In the whole arm type he feels that little can be offered.

Karshner, Rolla G., (*Am. Jour. Roentgenology*, Nov., 1926) offers a new name "osteopetrosis" to an already overburdened nomenclature for the condition known as "marble bones." Four cases are added to the literature.

Codman, E. A., (*Am. Jour. Roentgenology*, 1925, XIII) offers to the medical profession the nomenclature used by the Registry of Bone Sarcoma.

1. Metastatic tumors.
2. Periosteal fibrosarcoma.
3. Osteogenic tumors.
4. Inflammatory conditions.
5. Benign giant cell tumors.
6. Benign angiomas.
7. Ewings tumor.
8. Myeloma.

McWhorter, John E., and Weeks, Carnes, (*Surg., Gyn. Obs.*, Feb., 1925) report a case of multiple xanthoma with operation and pathological study of the tissues. Their conclusions are. 1. All forms of xanthoma are the result of a systemic disease in which hypercholesterolemia is an essential feature. 2. The pathology is probably due to a connective tissue reaction from irritation by cholesterol. 3. Recurrence probably follows removal. Therefore, operation is only indicated where pressure or loss of function is present.

Knaggs, R. Lawford, (*Brit. J. Surg.*, Oct., 1925) in an Hunterian Lecture summarizes the subject of Osteitis Deformans, particularly in its relation to osteitis fibrosa, and osteomalacia as follows: "Certain diseases of bones owe their origin to the action of toxins. . . . If the vitality is good the resistance opposed to the toxins may ward off harmful effects till the constitutional strength is reduced by age and disease. The reaction under these circumstances is strong, and the resulting affection takes the form of osteitis deformans.

"On the other hand, if vitality is feeble the disease appears earlier—in childhood, adolescence, or early manhood. The reaction is fair, but not so vigorous as in osteitis deformans. The form the disease then assumes is that of osteitis fibrosa.

"Lastly, when, owing to the severe depression of the patient's vitality, usually by untoward circumstances, the power to react is absent, osteomalacia develops."

Brooks, Barney, and Lehman, Edwin P., (*Surg., Gyn. and Obs.*, May, 1924) have studied seven cases of von Recklinghausen's Disease from the standpoint of bone changes. They find scoliosis, abnormalities of growth, irregularities in shafts of long bones. These are found to be subperiosteal tumors similar pathologically to the skin tumors. To the classical picture of skin and nerve changes should be added bone changes.

Lexer, Erich, (*Surg., Gen. Obs.*, June, 1925) reports his results in joint transplantations and arthroplasty. Of the former he has done 23 cases with 12 good results, 3 fingers and 9 knees. He discusses the relative values of half joint and whole joint transplants. Of arthroplasties out of 300 cases he reports 242 as very good or good, 34 failures, and 24 questionable.

Finney, J. M. T., and Hughson, W., (*Am. Surg.*, 1925, LXXXI, 255) report their results in the treatment of spasmodic torticollis by the Finney operation of nerve resection. Of 32 cases, 31 were traced, 12 cured, 16 improved, and 3 unimproved.

Henderson, M. P., (*Surg., Gyn. Obs.*, July, 1926) has used a method of repairing recurrent dislocation of the shoulder which he calls "teno suspension." Using the tendon of the peroneus longus muscle he has passed it through holes drilled through the head of the humerus, the clavicle, and the acromion process. With this he has cured three cases and feels that it promises more uniform results than the other procedures.

Allison, Nathaniel, and O'Connor, D. S., (*Surg., Gyn. Obs.*, Feb., 1926) describe the pathology in three cases of cysts of the semilunar cartilage. These cysts are multilocular, without endothelial lining, and filled with a mucoid substance. In over fifty percent of cases a history of injury is present.

McCafferty, Lawrence K., and McCarthy, C. Lee (*J. Bone and Joint Surg.*, July, 1925) dis-

cuss the pathology and differential diagnosis between callosities and plantar warts. They have treated these conditions by X-ray and radium in conjunction with orthopedic measures, and feel that the X-ray offers the best means of ridding the patient of this condition. They report 85% cures, with X-ray in calluses, and 91% in plantar warts.

Dickson, F. D., and Diveley, R. L., (*J. A. M. A.*, Oct. 16, 1926) describe an operation for the correction of mild claw foot, consisting of a transplant of the extensor longus hallucis to the flexor longus hallucis, and an arthrodesis of the interphalangeal joint with good result in 56 cases.

Jones, R., (*Brit. Med. Jour.*, Oct. 11, 1924) reviews the subject of hallux valgus and hallux rigidus, giving indications for operations and operative procedures to be selected. He advocates removal of excess bone, but not of the metatarsal head, except in extreme cases. In hallux rigidus he prefers removal of the base of the phalanx.

Freiberg, Albert, (*J. A. M. A.*, Sept. 20, 1924) feels that the metatarsal must be shortened in hallux valgus, and advocates removal of its head, with careful reshaping of the end of the bone, and suturing of the capsule to maintain adduction.

Campbell, W. C., (*J. A. M. A.*, Dec. 19, 1925) reports 58 good results in 62 cases of his bone blocking operation for drop foot. These cases were examined three years after operation. He reviews the indications for the operation, and the technical procedure.

Bristow, W. Rowley, (*J. Bone and Joint Surg.*, April, 1925) reviews the anatomy of the knee joint, discusses the diagnosis and differential diagnosis, and treatment of internal derangements of the knee. He also describes in some detail both the gross and microscopic pathology found. His end result study was on thirty-nine cases, of which thirty showed excellent results. That the internal semilunar cartilage is the most important factor in internal derangement is emphasized in this paper, and in the discussion which accompanies it.

Speed, J. S., (*J. A. M. A.*, Dec. 6, 1924) reports nine cases of synovectomy of the knee, with a high percent of good results. He feels that monarticular lesions offer the best prognosis, but that synovectomy during the progressive stage of a polyarthritis is of doubting value as a routine procedure.

O'Ferrall, John T., (*J. A. M. A.*, Aug. 15, 1925) points out the difficulty in diagnosis of hemangiomas, advises a guarded prognosis, and reports three cases affecting the knee joint.

Swett, P. P., (*J. Bone and Joint Surg.*, Oct., 1924) adds 12 cases to his series of synovectomies for chronic arthritis. He advocates early removal of the involved synovia in affected joints, and states that the best results are in

those cases where early changes only have taken place.

EXPERIMENTAL

Key, J. A., (*J. Bone and Joint Surg.*, July, 1925) studying the regeneration of synovial membrane in synovectomized rabbits found that in about sixty days the regeneration had been complete, though the regenerated membrane presents certain differences from the normal membrane.

Key, J. A., (*J. Bone and Joint Surg.*, July, 1926) studied the removal of carbon particles (India Ink) from joint cavities of rabbits. He found that most of the particles were phagocytized by macrophages and leucocytes, and by the tenth day the greater part of it had been carried out of the joint by these cells. Most of the carbon remained in the loose tissues around the joint.

Allison, Nathaniel, Fremont-Smith, Frank, Dailey, M. E., and Kennard, M. A., (*J. Bone and Joint Surg.*, Oct., 1926) have studied knee joint fluid in 23 cases as follows:

(a) Non-infected fluids—traumatic, chronic arthritis, etc. 17 cases.

(b) Fluids with pus forming organisms, 4 cases.

(c) Tuberculous fluids, 2 cases.

They have determined the protein, chloride, sugar, and non-protein nitrogen in these cases. The most important element is the sugar content which was markedly lowered in the pyogenic joints, while in two cases of tuberculosis, the sugar was moderately lowered. In this respect the analysis may be of diagnostic value.

Wolecott, W. Eugene, (*J. Bone and Joint Surg.*, Jan., 1927) working with dogs, has shown that the synovial membrane does regenerate, following synovectomy. That the newly formed pouch closely resembles the normal in size, contour, and function. The regeneration is due to connective tissue metaplasia.

Johnson, Robert W., Jr., (*J. Bone and Joint Surg.*, Jan., 1927) in a well conceived and worked out series of experiments on dogs, has demonstrated the relative importance of periosteal, metaphyseal, and nutrient blood supply in the diaphysis of the long bones. He concludes that the nutrient vessels maintain viability throughout the medulla, and supply the inner half of the cortex; that the metaphyseal vessels do the same, but not so effectively, except at the metaphyseal ends. The periosteal vessels do not supply more than the outer half of the cortex effectively. Thus the nutrient vessels are the most important, the metaphyseals next, and the periosteal system the least.

**Case Records
of the
Massachusetts General Hospital**

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 13251

THE END OF AN ALCOHOLIC VAGRANT
MEDICAL DEPARTMENT

An Irish-American tramp cook thirty-seven years old entered for the first time June 15, ten months before his final admission, complaining of pain, photophobia and blurring of vision in the right eye.

Late in February, after continual exposure, he noticed a sore on the side of the glans penis. He treated it with ointment. After ten weeks it healed. A month after the appearance of the chancre a rash appeared on his arms and legs, spreading later to his body. He treated this with the same ointment. For two weeks it had been improving. Two weeks before admission his right eye became red and felt as though there were dirt in it. There was profuse watery discharge lasting three days. He had pain in the eye and photophobia. He treated it several times with argyrol without relief.

He knew nothing about his family. He ran away when he was nine years old. Until the present illness his health had always been good. Twelve years before admission a hard mass which he was told was a blood cyst was removed from behind his left knee. He smoked fifteen to twenty cigarettes a day and drank "occasional" alcohol.

Clinical examination showed a poorly developed and nourished man not apparently ill. The skin over the entire body was covered with a maculopapular rash, more marked on the extremities, the lesions varying from two to six millimeters in size, dull red and irregularly distributed. Throat red. Right anterior cervical glands enlarged and tender. Axillary, epitrochlear and inguinal glands on both sides enlarged, not tender. Heart, lungs, abdomen, extremities, rectal examination and reflexes normal. On the left side of the foreskin was an indurated scar about 2 centimeters long by 0.15 centimeter wide. The under side of the penis near the glans was red, swollen and indurated. On the right side of the glans was a small circular scar. The left pupil was normal. The sclera and conjunctiva of the right eye were injected. The iris had a muddy appearance. The pupil was slightly irregular and did not react.

Urine cloudy, specific gravity 1.016. Renal function 50 per cent. Blood normal. Wassermann strongly positive.

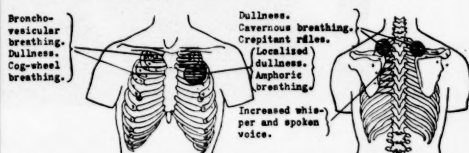
Temperature 100° to 98°, pulse 100 to 73, respirations normal.

The patient was given 0.3 grains of diarsenol on June 9 and again on June 13. The eye showed much improvement. June 13 he was discharged to the Out-Patient Department.

A course of intravenous treatments was begun in the Out-Patient Department. After three injections however he eloped because he felt well. He worked steadily up to the middle of December, then stopped because of progressive deafness and buzzing in his right ear and general weakness. Beginning the end of August he gradually lost appetite. Beginning in January he had a thin yellowish discharge from the right ear. Beginning the first of April he had slight headache, sore throat and cough with sputum which he attributed to the throat condition. He lost he thought six or eight pounds in ten months. A Wassermann in the Out-Patient Department April 26 was negative.

April 26, ten months after his discharge, he was readmitted. He now said that his only ambition was to be a rover and to drink all the liquor he could get. At the time of his generalized eruption he had a thin urethral discharge without other local symptoms.

On clinical examination he was emaciated. The skin was clear. The right ear was discharging. The throat, tonsils, soft palate and uvula were covered with grayish patches. The throat and fauces were injected. Cervical, axillary, inguinal and epitrochlear adenopathy. Harrison's groove. Lung signs as shown in the diagram.

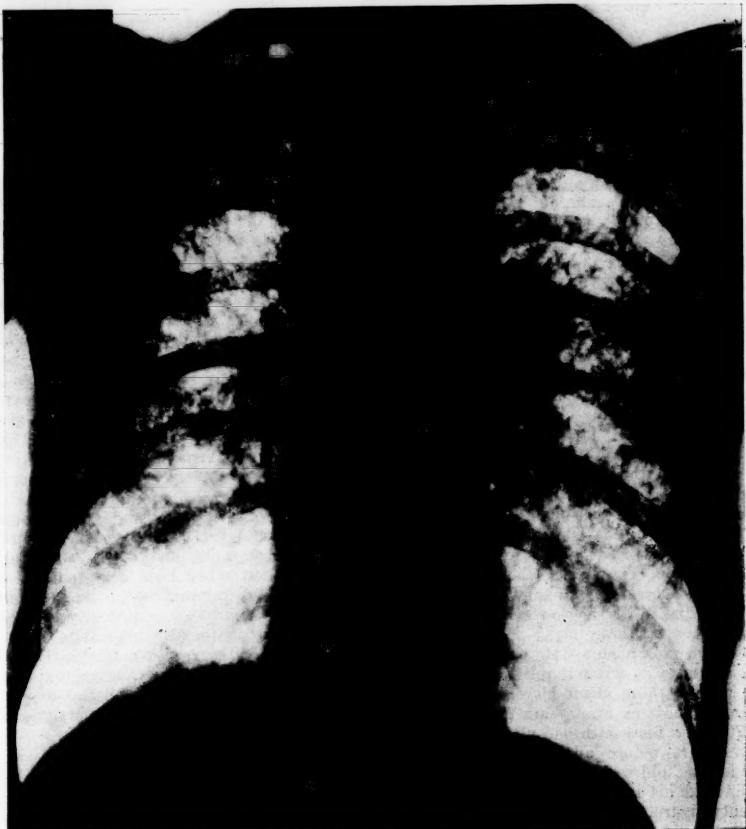


Narrowed isthmus on the left. Heart drawn to the right. Apex impulse not localized. Left border of dullness 6.5 centimeters to the right of midsternum, a centimeter and a half inside the midclavicular line. Right border 5 centimeters, supracardiac dullness 6.5 centimeters.

Urine cloudy at both of two examinations, specific gravity 1.022 to 1.026, pus cells at both sediment examinations. Blood: 14,000 to 12,000 leucocytes, 81 per cent. polynuclears, hemoglobin 70 per cent., reds 3,550,000, slight achromia, platelets much increased. Wassermann negative.

X-ray showed fine diffuse mottling involving the greater portion of both lung fields. There was diminished radiance at each apex.

Until May 8 temperature 99° to 103.2° by mouth, pulse 81 to 112, respirations 20 to 31.



Taken April 28, second admission. Shows fine diffuse mottling involving the greater portion of both lung fields. There is diminished radiance at each apex.

After May 8 temperature 97.7° by mouth to 103.2° by rectum, with wide daily swinging; pulse 99 to 130, respirations 25 to 40.

A throat consultant found the epiglottis ankylosed. It was impossible to see the cords. There was marked infiltration of the arytenoids.

The patient was given three doses of 0.4 grams neodiarsenol. The lesions in the throat showed little if any improvement. May 6 he began to complain of pain over the whole left chest, worse with respiratory movements. With oil spray and orthoform tablets he was able to swallow better. His appetite however was very poor. By advice of another laryngologist a biopsy was done May 8. The patient failed steadily. A week later he was having much less pain, his appetite had improved, and the throat lesions had cleared up to a great extent. He com-

plained however of distress from cough and difficulty in expectoration. May 17 his face was somewhat puffy. May 19 he died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

We are dealing with a man who has had syphilis apparently for fourteen months. He had a chancre, he had glands and a rash, apparently typical; he had what looked like an iritis which improved very much under syphilitic treatment. He got better, and in our traditional hospital language, not always understood in other places, he "eloped." He turned up again later with an otitis media, and finally, for his second ad-

mission, ten months after the first, with a long history of alcoholism and of general vagrancy which had not been brought out so much before.

On physical examination they found this otitis, they found mucous patches in his mouth, they found large glands in all the usual places, a secondary anemia, a fever and the signs shown in the diagram, which are those of solidification at the top of both lungs, especially the right.

The X-ray verifies and extends, as X-rays ordinarily do, what we get by physical examination, showing mottling throughout both lung fields, not only the apices, which we had found before. Then there is an infiltration, I suppose tuberculous, of the larynx.

He was not here long the second time, and died apparently from the infection in his lungs.

DIFFERENTIAL DIAGNOSIS

The only discussable thing that I see is the condition of his lungs, from which he obviously died. I see no good reason to doubt that he had syphilis at the time of his earlier admission, but I do not see any good reason to believe that he died of syphilis. In the first place syphilis of the lungs, according to the little that is known about it yet, does not give at all these signs, signs chiefly at the apices of both lungs with mottling all the way down. In the few cases where we have had good evidence of syphilis of the lungs it shows a great deal of trouble throughout one lung, apparently connected with a stenosis of a bronchus, and apparently none on the other side. This case is bilateral and apical. So that I have no doubt he had and died of pulmonary tuberculosis.

It remains to discuss what relation, if any, had syphilis as a minor factor to this ordinary death from tuberculosis. We have often noticed in these exercises how seldom a diagnosis of syphilis made during life is backed up post mortem, and almost the only cases in which it is backed up are cases of longstanding syphilis with tertiary lesions. The lesions which this man has had have been apparently recent, and I do not believe Dr. Richardson will tell us anything about syphilis. My guess is that he will tell of tuberculosis and nothing else. I do not suppose that the diagnosis of syphilis made earlier is wrong. He may have had syphilis and got cured of syphilis, so that no gross lesions will be found after death.

A PHYSICIAN: The Wassermann was negative.

DR. CABOT: Yes, it was the last time. But we remember that he had a fever, and we do not pay much attention to the Wassermann in the presence of fever, although, as I remember, it is more likely to be wrongly positive than negative.

As to that lesion of the larynx I am not expert enough to have any opinion. But as I am convinced that he had an advanced tuberculosis of his lungs, it seems to me more likely that it

was tuberculosis in his larynx than that it was syphilis, which of course also attacks the larynx.

I do not see any evidence of disease in any other part of his body. Whatever there may be beyond the respiratory system does not come out in our record.

I think the X-ray gives us reason to believe that the lesion was very extensive in each lung. I should be much obliged if you would show the plates, Dr. Camp.

DR. JOHN D. CAMP: This film shows extensive infiltration involving both lung fields, with fine mottling extending to the periphery and running up to each apex. The apices are not so dense as usual, and in each we have a shadow of diminished density with an absence of the lung markings, especially in the right apex. This should represent cavitation. The findings as far as the X-ray goes are rather characteristic of a diffuse process involving both lungs, which we associate with tuberculosis,—a rather advanced case.

DR. CABOT: Is it particularly common to have this low diaphragm and long heart in cases of tuberculosis?

DR. CAMP: It is very common. What the relation is I do not know. We frequently see a long narrow heart with a low diaphragm in some cases of emphysema. We explain the small size of the heart by apparent rotation due to the emphysema.

DR. CABOT: Would you like to add anything on the subject of syphilis of the lung?

DR. CAMP: Syphilis of the lung, as far as the X-ray is concerned, is very rare. You have mentioned the case Dr. Holmes has mentioned so many times. That was due to syphilitic ulceration of the bronchus with partial stenosis, and produced the appearance we see in bronchial stenosis. Cases with generalized fibrosis have been described, but they are rare. This case has not the appearance of generalized fibrosis. The lesions are not so dense as they are supposed to be in that condition.

DR. CABOT: I suppose his sputum was positive.

I think it is worth asking whether the presence of syphilis predisposes to a secondary tuberculous infection. Have you any ideas about that, Dr. Bock? Is tuberculosis commoner as an invasion in syphilitics than in any other people?

DR. A. V. BOCK: I should not think so; but the presence of any infection such as syphilis would be a foreground for the implantation of any infection.

SPUTUM EXAMINATION, SECOND ADMISSION

One to eight tubercle bacilli per field.

X-RAY INTERPRETATION

The findings are those of extensive primary tuberculosis with cavities at each apex. The

appearance of the chest in the lower lung field rather suggests a miliary process, probably secondary to an earlier lesion.

REPORT OF LARYNGOLOGICAL CONSULTANT

The lesions on the palate and pharynx are tuberculous, possibly mixed with syphilitic lesions.

BIOPSY MAY 8

A tiny fragment from the palate shows no evidence of malignancy on microscopic examination. No positive evidence of tuberculosis.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Pulmonary tuberculosis.
Tuberculous laryngitis.
Syphilis.

DR. RICHARD C. CABOT'S DIAGNOSIS

Advanced tuberculosis of the lungs.
Possibly tuberculosis of the larynx.

ANATOMIC DIAGNOSES

1. *Primary fatal lesion*

Tuberculosis of the lungs, with cavity formation.

2. *Secondary or terminal lesion*

Tuberculous ulcers of the ileum and cecum.

3. *Historical landmarks*

Chronic pleuritis.

DR. RICHARDSON: The lesions in this case were perfectly definite. He was a poorly nourished white man. We were not permitted to examine the head. The skin over the left leg showed scattered flat old brownish scars, whether evidences of syphilis or not I do not know. This necropsy was made 1067 hours post mortem.

The peritoneal cavity, appendix, and the gastro-intestinal tract generally were frankly negative, except that in the region of the lower end of the ileum there was a large girdling area of frank tuberculous ulcerations. The tuberculous ulcers of the intestine frequently extend around the intestine, giving somewhat of a girdle appearance. It is rather characteristic of tuberculous ulcerations, and not of any others that I know of. The nearest thing to it would be a ring carcinoma extending around the intestine with ulcerations in the region of the mucosal surface. In the region of the cecum there was another large area of tuberculous ulceration. The peritoneum opposite the base of the ulcerations showed tubercles. No tuberculous lesions were made out in the mesenteric glands. There was a history of trouble in the throat, probably

tuberculous, and presumably the intestinal ulcers were due to swallowed bacteria.

There was no fluid in the pleural cavities. There were old pleural adhesions on each side. The trachea and bronchi contained much mucopurulent material but were otherwise negative. No definite tuberculous lesions were made out in the bronchial glands, yet in the upper half of each lung there were well marked areas of tuberculosis with cavitation. The remaining lung tissue was scattered throughout with tubercles. In one or two places there were small fibrocaseous masses.

The heart weighed 265 grams, with negative myocardium, valves and cavities.

No definite tubercles were made out in the liver. The gall-bladder and spleen were frankly negative, no tubercles made out. The adrenals were negative. The kidneys weighed 310 grams. No definite tubercles or other lesions were made out. The pelves, ureters, prostate, seminal vesicles and testes were negative. I found no evidence of syphilis.

A PHYSICIAN: In case of syphilis of the lung do you find it confined more to one side than the other?

DR. CABOT: I have never seen a case, but we have had a few in the X-ray Department here believed to be syphilis of the lung, and they were all said to be on one side.

A PHYSICIAN: We have had several cases following pneumonia which were considered to be syphilis. Necropsies later showed definite infiltration of the left lower lobe. We had no evidence of syphilis except fibrosis.

DR. CABOT: It seems to me if we have had evidence of pneumonia, a disease which not infrequently ends in fibrosis, we had better stick to that rather than suppose any other etiology.

CASE 13252

A CASE WITH LOSS OF MEMORY, DISORIENTATION AND FAINTING

SURGICAL DEPARTMENT

A married American woman fifty-two years old entered the hospital October 16. The chief complaint was disorientation. The history was given by her son.

Six months before admission she began to lose her memory for details and names. After much effort she could occasionally recall them. In trying to name some intimate friend she might give another name and know she was giving the wrong name. There was some weakness. Six weeks after the onset of symptoms she had frequent headache followed by an attack of vomiting. After this her memory defect progressed. When fresh in the morning she might for a few minutes act normally, but soon fatigue set in and her memory was very bad. Severe periodic

headache continuous for hours became marked, associated with and occasionally relieved by persistent projectile vomiting. She gradually became disoriented. Four months before admission she had a remission of the headache. With this she had diplopia for a few weeks, followed by a dimming of vision which progressed until she now had only gross and indistinct vision. Six weeks before admission the headache and vomiting recurred for two weeks. Since that time the headache had been slight, but character changes more marked. She was hypersensitive, unreasonable, frequently disoriented, most of the time not recognizing relatives or friends, talking at random, very nervous and excitable, sometimes sensible, more often saying disconnected and ridiculous things quite unassociated with her environment. She might rhyme words or perseverate on the same word and do this in attempts to explain herself. If finally understood she would acknowledge that she could not find the right word.

One sister died of cancer. Another sister with melancholia committed suicide.

The patient had always been fairly vigorous though nervous. Her son knew of no illnesses except appendicitis with appendectomy twenty years before admission and pneumonia four years ago. She had had slight pain in both shoulders for years. Recently she had water brash. Her catamenia were still regular.

Clinical examination showed a well nourished middle-aged woman sitting up in bed, staring and continually talking gibberish, only spasmodically coöperative, evidently disoriented. Occasional projectile vomiting. Purulent posterior pharyngeal discharge with follicular submucosal whitish spots. Slight bilateral exophthalmos, especially on the right. Heart and lungs normal. Blood pressure 210/140. Pulse rapid. Pupils equal, regular, reacted normally. Fundi both choked, tortuous vessels, swollen nerve heads, three diopters swelling. An eye consultant reported bilateral papilledema and retinal hemorrhages. Difficult to measure about four diopters of swelling. Reflexes all normal except abdominal reflexes. Normal finger-to-nose and finger-to-finger tests. Gait normal. No sphincter disturbance. The patient had gross vision and could count fingers and possibly recognize people. How much she could see was problematical. She wrote spontaneously and to dictation, though as though she was not seeing what she wrote. All other cranial nerves normal.

The patient was completely disoriented in time and space. Her continuous stream of sentences and phrases taken by themselves made some sense at times, at other times none. Taken together they meant nothing. Her stream of talk was suggested after a period of quiet by the slightest noise and moved from one thing to another in the way characteristic of the condi-

tion termed "flight of ideas," by the suggestive power of words she spoke herself. Only occasionally she came down to earth and mentioned her husband's or her son's name. Her words continually reverted back to one phrase—"my egg," "your egg." On being left by her husband she began to scream, but when reprimanded quieted down. During physical examination she coöperated fairly well. The psychic disturbance therefore was a maniacal one in which she was not wild but frequently was unruly, continually restless, with a peculiar hypersensitivity to auditory stimuli. She made no complaint except that her eyes were poor.

Urine, blood and Wassermann not recorded.

X-ray plates of the skull were unsatisfactory on account of motion. As far as could be determined they showed no lesion.

Before operation temperature 97° to 100.2°, pulse 74 to 134, respirations normal.

October 23 operation was done, and October 29 a second operation. The patient made the usual operative convalescence. She was much quieter than before the operation, but still irrational. The wound healed by first intention. November 1 the sutures were removed. There was a peculiar edema of the face, more marked over the right parotid. The temperature was normal. That night there was Cheyne-Stokes respiration. The following day the patient was drowsy and hard to rouse. She responded with the usual talk. That morning the temperature rose to 103.4°.

November 2 a third operation was done. The following day the patient was in about the same condition as before operation. Two days later she scarcely spoke at all, was difficult to feed and did not retain rectal glucose.

November 7 a fourth operation was done. She made a fair immediate recovery but did not speak at all. She stared occasionally and winked her eyes. The lower jaw hung, leaving her mouth open. November 13 she was practically moribund, blue, semiconscious, with slow and shallow respirations. She barely swallowed what was fed her and did not retain fluids by rectum. During the next three days she made remarkable improvement. The wound of the third operation was healed, that of the fourth was not quite closed. November 19 she died.

DISCUSSION

BY JOHN S. HODGSON, M.D.

If one suspected the possibility of tumor of the brain, this condition might raise the question of a frontal lobe lesion or possibly a lesion in the speech area. So far no mention has been made of a definite aphasia, but that question at once comes into one's mind.

The headache and vomiting suggest increased intracranial pressure and make us feel that we are dealing with a case of brain tumor probably,

rather than a psychosis of some sort without a brain tumor.

It is hard to say whether the trouble with her memory means frontal, temporal or parietal lobe involvement.

The explanation of the remission of the headache is difficult. The process may for some reason have stopped altogether or may have slowed down. We frequently see this in brain tumor, especially in cases of hydrocephalus.

The diplopia could come from general increase of intracranial pressure, generally from involvement of the sixth nerve, though it may be the third or even the fourth. In this case it was probably due to increase of intracranial pressure rather than to direct involvement of one of these nerves.

"Character changes more marked" again suggests trouble in the frontal lobe. The difficulty with words suggests to me a little more the possibility of trouble in the temporal or parietal lobe rather than in the frontal lobe, although it may be in the frontal lobe giving pressure in the temporal or parietal region resulting in the trouble here described, the rhyming of words, perseveration, etc.

The family history makes one wonder whether this patient may be suffering from some type of dementia, but it seems improbable in view of the symptoms of pressure.

Bilateral exophthalmos we are as yet unable to explain. A unilateral exophthalmos might mean a local lesion or possibly a meningioma.

Her sitting up staring and talking gibberish goes with her abnormal mental condition and has no definite diagnostic or localizing value.

The pharyngeal discharge makes us think of the remote possibility of brain abscess.

The blood pressure is high.

The pupillary reactions indicate that the third nerve, in that respect at least, is all right.

In other words, there is definite evidence of considerable increase of intracranial pressure, which makes us feel that there must be a brain tumor.

The record does not say anything about the abdominal reflexes.

The finger-to-nose and finger-to-finger tests would seem to rule out the probability of a sub-tentorial lesion and also to show that there was not enough weakness to give ataxia. "Gait normal" speaks against the probability of cerebellar disease.

Although the patient was disoriented the sphincters were intact.

"All other cranial nerves" means all but the optic nerve, I should say.

So far we have a history of a woman who had been ill for six months, chiefly with mental symptoms, disorientation, a suggestion of aphasia, and general symptoms of increase of intracranial pressure such as headache and vomiting. We have nothing, as I see it, of a local-

izing nature excepting the suggestion of a frontal, possibly a temporal or parietal lobe lesion. As to which side it is on I do not think we have any evidence, unless we are willing to believe that it is in the speech area, in which case it is probably on the left side, although we are not told whether or not she is right-handed. In other words, we have not much clinical evidence as to where this tumor is, and we have to resort to special means to determine this. The X-rays do not help us. That may be due to the fact that the patient moved about.

My diagnosis to date would be a frontal lobe or a temporal lobe tumor. I do not think we have enough evidence to make us feel strongly that it is one or the other. It seems to me that the evidence points more to the probability of frontal lobe tumor, although it could be temporal and that might explain the continual talking. But I think that the probable diagnosis so far is frontal lobe tumor. I do not know which side.

PRE-OPERATIVE DIAGNOSIS OCTOBER 23

Tumor (?) of frontal lobe.

FIRST OPERATION

Local novocain. It was the intention to tap the posterior horn of the left lateral ventricle and to inject air for diagnosis. About 3.5 centimeters in from the cortex yellowish cyst fluid containing broken-down brain or tumor tissue was removed to the amount of 6 cubic centimeters. This probably represented gliomatous cyst fluid. This finding was entirely a matter of chance, as the pre-operative diagnosis was frontal lobe tumor rather than occipital lobe tumor.

FURTHER DISCUSSION

We have found that injection of air into the ventricles is often a definite help in localizing a lesion, and that is what we proposed to do in this case. We usually tap the posterior horn, but may tap the anterior horn. The posterior is a little safer because one is less likely to strike vessels in that than anteriorly. When we tap by the posterior horn we usually try to go through the occipital lobe, but sometimes we get higher than we expect and go through the parietal or even the temporal. In this case it seemed to me that we were in the region of a portion of the occipital lobe, and we found this cavity containing cyst fluid. It was a lucky find, and at once showed us that there was trouble in that region,—in other words, far back rather than forward in the cerebrum, as we had anticipated. The report does not say that we injected air into that cyst. We sometimes do that. We were probably satisfied in this instance without injecting air. We always send the fluid to the laboratory, because we find increased protein in these cysts.

PRE-OPERATIVE DIAGNOSIS OCTOBER 29

Occipital lobe gliomatous cyst.

SECOND OPERATION

Gas and ether. A bone flap was made over the left posterior parietal and occipital region on the left. The dura was found to be extremely tense. A small amount of brain had herniated through and lacerated at the point of the previous tap. The dura was incised for a very short distance and a ventricular needle inserted. The cyst was again found about 3 centimeters in from the surface. About 5 cubic centimeters of yellow fluid containing numerous flecks of material was obtained. With a Mixer punch several specimens of tissue were taken for microscopic examination. On account of the extreme tension the dura was not incised any further. 100 cubic centimeters of hypertonic saline was given intravenously in the hope that the brain might be shrunk sufficiently to permit the opening of the dura. The desired effect was however not obtained, and the dura was not opened any more. It was planned to do a decompression on the other side and to give a course of hypertonic treatments before doing a second stage bone flap.

PATHOLOGICAL REPORT

A small cylindrical fragment from the brain containing on microscopic examination areas of normal cerebral cortex and small distinct areas of atypical glia cells with gliosis.
Glioma.

FURTHER DISCUSSION

The Mixer punch is much like an ordinary needle, only with a blunt end which has a stylette that passes beyond the end of the punch. The stylette is taken out and the punch slowly rotated and advanced to the desired depth. By withdrawing it we usually obtain a specimen of the brain or of the tumor, and that is later examined microscopically.

We were afraid of getting hernia and laceration of the brain.

In other words, we did only the first stage of this bone flap. We reflected the flap but did not open the dura. We were afraid to decompress at that time.

PRE-OPERATIVE DIAGNOSIS NOVEMBER 2

Left occipital gliomatous cyst.

THIRD OPERATION

Under local novocain a right subtemporal decompression was done. The dura was tense. Before opening it wide the right lateral ventricle was tapped in three places, the anterior horn, the temporal horn and the posterior horn. In each locus fluid was obtained. This resulted

in a considerable reduction of pressure, so that the dura could be crucially incised without any appreciable herniation of the brain.

FURTHER DISCUSSION

Decompression was done on the other side to take care to a certain degree of the increased intracranial pressure.

FOURTH OPERATION, NOVEMBER 8

The cyst area was again tapped. Only a few drops of fluid were obtained. The area was then incised widely, spread with a speculum and explored. Tissue closely resembling glioma was found, but no specimen was taken at this time. There was markedly increased pressure and marked herniation on incising the dura, and there was moderate laceration at the point of exploration of the brain. On account of the excessive tension and the rather extreme condition of the patient the bone was entirely removed from the flap, leaving simply skin and underlying tissue to be closed over. The patient's condition throughout the operation was fair.

FURTHER DISCUSSION

In spite of the decompression that we had done pressure was still very high and there was laceration when the dura was opened.

"The bone was entirely removed from the flap." That is a thing we very rarely do, but it seemed to be necessary in order to permit closure in this instance.

Thus we have a case in which the history and the physical findings do not help much in localization. Just by a matter of chance in tapping for the lateral ventricle with the intention of injecting air we punctured a cyst in a portion of the brain quite removed from the place where we suspected trouble. This proved to be the region where the tumor existed. Unfortunately we were unable to remove any tumor. We were simply able to make a diagnosis. There was so much pressure that the patient's condition went from bad to worse and she finally died. We were still unable to state the exact localization of the tumor from what we had done. That remains for necropsy to tell us.

DR. CABOT: What was the purpose of the exploration of the tumor at the fourth operation?

DR. HODGSON: At the fourth operation we hoped that we might be able to remove some tumor, but the condition of the patient was poor and it seemed to us hardly worth while to attempt to remove it.

DR. CABOT: Might it have relieved symptoms if you could have removed some of the tumor?

DR. HODGSON: If we could have removed some of the tumor earlier it might have relieved her symptoms, I think. It is an unsatisfactory

case because we have not a good history. We do not know anything about the early history of this case. If it were a temporal or parietal case we might have a great many things. We might have had aphasia, hemianopsia or hemianesthesia. We were unable to get visual fields. All those things are done whenever possible, but at times we have to rely largely on such tests as air injection and combined puncture.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Glioma of cerebrum.
Exploration of the cranial cavity.
Left temporal bone flap.
Subtemporal decompression.

DR. JOHN S. HODGSON'S DIAGNOSIS

Tumor of frontal or temporal lobe.

ANATOMIC DIAGNOSES

1. *Primary fatal lesion*

Glioma, left temporal lobe of brain.

2. *Secondary or terminal lesion*

Bronchopneumonia.

3. *Historical landmarks*

Decompression.
Arteriosclerosis.
Cholelithiasis.
Leiomyomata of the uterus.

DR. MALLORY: At the time of the necropsy there was quite marked herniation of the brain through the decompression opening, but externally except for this nothing abnormal was made out. On section we found a large tumor lying chiefly in the temporal lobe, extending forward towards the frontal lobe and back a slight way into the occipital lobe. It did not quite get into the frontal anteriorly. In this tumor were two cysts, one about three centimeters in diameter, the other only about one. The walls of the cysts of course were composed of tumor tissue which infiltrated the brain diffusely on all sides, making the total diameter of the tumor about seven centimeters. Microscopic examination showed an infiltrating tumor composed of very large atypical glia cells with production of very many coarse neuroglia fibrils. The greater part of the tumor showed so much necrosis and hemorrhage that little could be made out.

DR. CABOT: What is the source of the cyst and cyst fluid in these cases?

DR. MALLORY: I think it is generally a matter of degeneration. Presumably in rapidly growing tumors anywhere the blood supply is very apt to be cut off, and I think that is rather unusually frequent in gliomata. Following that necrosis occurs, and very frequently there is cystic degeneration.

THE DECLINING TUBERCULOSIS DEATH RATE

THE May 1927 Bulletin of the Metropolitan Life Insurance Company reports a sharp drop in the tuberculosis death rate for the first three months of 1927 among its policy holders amounting to nearly seven per cent from the figures for the corresponding period of last year. Among whites the rate was 70.9 per 100,000. The death rate is usually higher during the first part of the year, hence it is expected that 1927 will get a new record. Sixteen years ago this death rate was about three times the present figures. Colored people also show a marked decline in this death rate.

Dr. Dublin predicts that the tuberculosis mortality will in all probability drop to 50 per 100,000 in 1930. He feels that general prosperity and efficient preventive and educational work are to be given credit for the showing.

THE BURDEN OF THE HANDICAPPED

THE *Metropolitan Life Insurance Bulletin* estimates that well over a million persons in the United States are handicapped or wholly incapacitated as wage earners by various physical or mental impairments. This group represents a social burden of large proportions for in this country there are in round numbers 75,000 blind, 45,000 deaf and dumb, 43,000 feeble minded, nearly 9,000 epileptics, and 268,000 mentally diseased. To this number there should be added over 12,000 feeble minded in almshouses, and 15,000 epileptics in various institutions. Paupers in institutions amount to 78,000 and according to some estimates there are 700,000 persons who are crippled to an extent interfering more or less with earning capacity. Of course among these defectives there are some who have a limited earning capacity, but in each class the earning capacity is a relatively small credit against the cost of maintaining these huge armies. These estimates appear in the May *Bulletin*. The information contained in these statements is valuable.

Added to the cost of innocent dependents society has to carry an additional burden for criminals impose a staggering financial problem which reaches to every citizen.

The strangest feature of the reactions to their facts is the complacency of the average citizen for comparatively few persons ever stop to think of the great losses to national efficiency which are due to the great number of incapacitated members of society and the menace of the criminal classes.

A perusal of the *Bulletins* of the Metropolitan Life Insurance Company will stimulate interest not only in health problems but in civic responsibilities.

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AN UNSCORCHED PHAETON

THE world has lately witnessed its greatest romance of the upper spaces; an epochal event in the conquest of the air that has sent a genuine and generous thrill into the hearts of all civilized peoples. Great as has been the feat accomplished, it is not so much the feat that stirs us, for we knew that it was bound to come, as it is the fact of a lone adventurer through cloud and fog, seeking not personal exploitation and shunning personal aggrandizement, bent on achieving a new mark in the interests of scientific advancement.

It was not publicity that Lindbergh sought in his solitary flight from the metropolis of the new to the metropolis of the old hemisphere, although that has come to him in good measure, nor was it material reward, for this he has refused to consider. It was the spirit of adventure and an earnest desire to further the science of aviation that sent him on his way, and it was through his achievement and because of his modesty in success that he has done more in welding the nations than any other man now living.

Hero worship may be an attribute of those who have not the stuff that heroes are made of, but it is nevertheless an attribute of some no-

bility itself, for it is based on the generous recognition of an ability that the hero worshipper himself does not possess. A high degree of hero worship is something that Lindbergh has earned and must accept whether he wills it or not, for he has written a great deed on the records of the race, and has acquitted himself as only a man of sterling character and great modesty could. The real test has come after the fact has been accomplished, and the young aviator has borne himself well; he does not seem to be one of those, brave in the face of danger, whose head is later turned by the plaudits of the crowd. It is this that endears him to us.

It seems a pity that hero worship, containing in itself the elements of greatness, cannot be maintained as a dignified emotion, free from sensationalism and a tendency to hysterical adulation. We cannot prevent our agents of publicity, however, from exploiting to their own advantage any great deed, even if it is necessary to sacrifice the deer on the fierce fires of unsought notoriety.

Lindbergh is to all of us a great hero for having winged his way across the Atlantic; to some of us he is a still greater hero for having withstood the adulatory onslaught of the multitude.

THIS WEEK'S ISSUE

CONTAINS articles by the following authors:

SMITH, GEORGE GILBERT, A.B., M.D. Harvard Medical School 1908; F.A.C.S.; Urologist, Massachusetts General Hospital; Surgeon, Huntington Memorial Hospital; Member of the American Association of Genito-Urinary Surgeons, and the American Urological Association. His subject is: "Total Cystectomy for Cancer." Page 1031. Address: 6 Commonwealth Ave., Boston.

COLBY, FLETCHER H., S.B., M.D. Harvard Medical School 1918; Assistant in Surgery, Harvard Medical School; Junior Associate in Urology, Peter Bent Brigham Hospital, Boston. His subject is: "Exstrophy of the Bladder." Page 1033. Address: 6 Commonwealth Ave., Boston.

JOHNSON, HAROLD D., B.A., M.D. Harvard 1899; Urologist, Lynn Hospital, Lynn, Mass.; Member of the American Urological Association. His subject is: "Torsion of the Spermathe Cord." Page 1036. Address: 45 Nahant St., Lynn, Mass.

WHEELER, BANCROFT C., A.B., M.D. Harvard Medical School 1924; Assistant Resident Physician, Roosevelt Hospital, New York City. His subject is: "The Incompetent Uretero-Vesical Valve on the Uninvolved Side in Renal Tuberculosis." Page 1040. Address: Roosevelt Hospital, 428 West 59th St., New York, N. Y.

GRAVES, ROGER C., A.B., M.D. Syracuse University College of Medicine 1918; Urologist to the Carney Hospital, Boston; Secretary, New

England Branch of the American Urological Association. His subject is: "Acute Corpora Cavernositis." Page 1043. Address: 12 Bay State Rd., Boston.

CROSBIE, ARTHUR H., A.B., M.D. Harvard Medical School 1907; F.A.C.S.; Chief Urologist, Boston Dispensary; Consulting Urologist, Symmes Arlington Hospital, Arlington, Mass., Malden Hospital, Cambridge City Hospital, St. Elizabeth's Hospital, and Chelsea Hospital. His subject is: "Extopic Kidney with the Report of Three Cases." Page 1045. Address: 520 Commonwealth Ave., Boston.

CUNNINGHAM, JOHN H., M.D. Harvard Medical School 1902; F.A.C.S.; Associate in Genito-Urinary Surgery, Harvard Graduate School of Medicine; Surgeon, Long Island Hospital, Boston; Consulting Surgeon, Brockton, Plymouth, Chelsea, Melrose, Malden and Lynn Hospitals. His subject is: "Was it Malignant?" Page 1046. Address: 46 Gloucester St., Boston.

ROSENAU, MILTON J., A.M., M.D. University of Pennsylvania 1889; Professor of Preventive Medicine and Hygiene, Harvard Medical School; Professor of Epidemiology, Harvard School of Public Health. His subject is: "Peter Ludvig Panum." Page 1048. Address: Harvard Medical School, Boston.

GHORMLEY, RALPH K., B.S., M.D. Johns Hopkins University Medical School 1918; Assistant Orthopedic Surgeon, Massachusetts General Hospital; Instructor in Orthopedic Surgery, Harvard Medical School. His subject is: "Progress in Orthopedic Surgery." Page 1049. Address: 234 Marlboro St., Boston.

MISCELLANY

CORNELL GIVES M. D. TO 58 GRADUATES

FIFTY-EIGHT graduates of the Cornell Medical College, who received their degrees as Doctors of Medicine at commencement exercises June 9th at the college building, were admonished by Dr. Charles L. Dana to be "polished ladies and gentlemen as well as skillful and conscientious practitioners."

While stressing the necessity of maintaining the highest standards and always keeping abreast of progress in an exacting profession, Dr. Dana, in the commencement address, warned the graduates that three-fourths of the qualifications for success in medical practice were externals.

"Women will select the doctor who is presentable in preference to the one who is not," said Dr. Dana, "and it is the women who select the family doctor."

Dr. Dana warned especially against profes-

sional jealousy and urged the new doctors to cultivate some interest outside their profession—anything from collecting stamps and old books to some branch of science. He saw a solution of the problem of the country doctor in the fact that the automobile now has made it possible for them to live in a large town, and said the progress of aviation pointed to the eventual use of airplanes by doctors. Half jocularly he urged the graduates to "get married, practice medicine and learn to fly."

THE RIGHT OF DOCTORS TO GOVERN THE DOSAGE OF MEDICINE

IN referring to the "pint in two days" limitations of the use of whisky *The Newark Evening News* in an editorial expressed its opinion as follows:

In this latest action the doctors properly are not so much concerned with the question whether whisky is a disease specific as with their professional right to practise their calling according to their training and experience. What they demand, and have a right to obtain, is freedom from the dictation of the Anti-Saloon League and a subservient Congress in a matter of medical judgment, with which neither the league nor the Congress is in any sense endowed.

That the doctors have blood in their eyes as to this business is made apparent by their simultaneous determination to demand control of patent medicines which are largely alcohol. They make the point that these are illegal, under the law as it stands, wherever the spirit content is as much as one-half of one per cent. While legitimate medical practice is restricted to a dribble, the open door to this sort of flood is a fitting commentary upon the sanity of prohibition enforcement.

EXAMINATION CONDUCTED BY AMERICAN BOARD OF OTOLARYNGOLOGY

THE American Board of Otolaryngology conducted an examination at Washington, D. C., on May 16 and 17, and at Spokane, Washington, on June 4. Of the 142 men examined at Washington, D. C., 119 were passed and 23 failed to pass the examination. In Spokane, the number passed was 46, and the number failed was 6.

The next examination will be held in Detroit on September 12, 1927. The applications for examination should be sent to Dr. H. W. Loeb, Secretary, 1402 South Grand Boulevard, St. Louis, Missouri.

DISEASE INCIDENCE IN CONNECTICUT
WEEK ENDING JUNE 11

DISEASE	1927				1926			
	Week ending May 21	Week ending May 28	Week ending June 4	Week ending June 11	Week ending May 22	Week ending May 29	Week ending June 5	Week ending June 11
Actinomycosis	-	-	-	1	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-
Etiolation	-	-	-	-	-	-	-	-
Cerebrospinal Men.	1	-	-	-	2	1	2	-
Chickenpox	141	139	114	123	45	66	48	54
Conjunctivitis, Inf.	1	-	-	-	23	1	3	-
Diphtheria	22	36	26	31	28	27	14	16
Dysentery, Amoebic	-	1	-	-	-	-	-	-
Dysentery, Bacillary	-	-	-	-	-	-	-	-
Encephalitis, Epid.	-	1	1	1	2	-	1	1
Favus	-	-	-	-	-	-	-	-
German Measles	26	31	6	5	25	23	64	25
Hookworm Infection	-	-	-	-	-	-	-	-
Influenza	2	1	4	2	3	4	7	6
Leprosy	-	-	1	-	-	-	-	-
Malaria	-	-	-	1	-	-	-	-
Measles	44	57	44	67	214	471	544	421
Mumps	43	75	57	37	51	12	12	5
Paratyphoid Fever	-	-	-	-	-	-	-	-
Pneumonia, Broncho*	35	26	16	22	24*	39	41	24
Pneumonia, Lobar	39	39	20	25	19	32	33	25
Poliomyelitis	1	-	-	-	-	-	-	-
Scarlet Fever	99	76	68	89	61	81	84	90
Septic Sore Throat	-	3	1	5	-	1	-	-
Smallpox	-	-	-	-	2	-	-	1
Tetanus	-	-	-	-	-	-	-	-
Trachoma	-	-	1	-	-	-	-	-
Trichinosis	-	-	-	-	-	-	-	-
Tuberculosis	30	26	17	23	35	50	39	32
Tuberculosis (o.f.)	3	3	3	3	3	1	12	4
Typhoid Fever	-	1	-	2	4	9	-	1
Typhus Fever	-	1	-	-	-	-	-	-
Whooping Cough	14	16	39	13	53	62	39	29
Gonorrhea	36	51	67	24	25	57	10	5
Syphilis	26	32	29	29	28	36	17	13

*Average for two years. Made reportable January 1, 1925.
Remarks: No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

NEWS ITEMS

ROCKEFELLER FOUNDATION ELECTS—The Rockefeller Foundation has elected to its board of trustees Herbert S. Hadley, chancellor of Washington University, St. Louis; Dr. David L. Eidsall, dean of the Medical School of Harvard University, and Dr. George H. Whipple, dean of the School of Medicine and Dentistry, University of Rochester.—*Science*.

CALIFORNIA'S EUGENIC STERILIZATION—A study of the workings of the California eugenic sterilization law is being made, according to *Science*, by E. S. Gosney, a Pasadena philanthropist.

More than 5,000 operations have been performed in the State institutions, under this law, during 18 years, and it is the intention to analyze the effects from all points of view and make the facts public. The investigation has been in progress since the beginning of 1926, and seven papers have already been prepared for publication. The technical side of the undertaking is in the hands of Paul Popenoe, and the work is supervised by an advisory committee consist-

ing of Dr. J. H. McBride, Dr. George Dock, Henry M. Robinson, Otis H. Castle and Paul Popenoe, of Pasadena; Chancellor David Starr Jordan and Professor L. M. Terman, of Stanford University, and Professor S. J. Holmes, of the University of California. The Los Angeles Obstetrical Society has taken up, at Mr. Gosney's instigation, a parallel study of the operations for sterilization performed in private practice.

MENTAL HYGIENE CONGRESS—FIRST INTERNATIONAL CONFERENCE TO BE HELD IN WASHINGTON IN APRIL, 1929—The first international congress on mental hygiene, aimed at a world-wide campaign for the prevention of nervous and mental disorders, will be held at Washington, D. C., in April, 1929, according to a decision by representatives of 13 nations. The countries acted on the invitation of Clifford W. Beers of New York, general secretary of the International Committee for Mental Hygiene and founder of the mental hygiene movement 20 years ago.

The congress will establish an international organization with Mr. Beers as the permanent general

secretary and headquarters in the United States so that Mr. Beers may continue to serve as secretary of the National Committee for Mental Hygiene.

The countries represented at the meeting, and the delegates were: Belgium, Dr. August Ley and Dr. Vervaeck, both of Brussels; France, Dr. Henri Clause, Joseph Delaitre and Drs. Genil-Perrin and Edouard Toulouse, all of Paris; Germany, Drs. Ernst Roemer of Baden and Robert Sommer of Glessen; Great Britain, Hubert Bond of London and George Robertson of Edinburgh; Holland, K. Herman Bauman of Amsterdam; Hungary, Gustave Olah of Budapest; Italy, G. C. Ferrari of Bologna; Luxembourg, Ernst Wenger; Norway, Sigurd Dahistrom, Hans Evenson and Ragnar Vogt of Oslo; Spain, Gonzales A. Lafora of Madrid, W. Lopez Albo of Bilbao and Rodriguez Arias of Barcelona; Sweden, Josef Lundahl; Switzerland, Andre R. Monthey. Mr. Beers represented the United States.—*New York Evening Post*.

MORE FUNDS FOR MEDICAL EDUCATION—Columbia University will receive \$15,000 under the will of the late Dr. Henry Koplik, specialist in children's diseases, to be used for the establishment of a scholarship for the study of children's diseases.

An allotment of \$130,000 has been made the University of Oregon Medical School by the General Education Board. This fund is to be used for traveling expenses, the improvement of equipment, additional salaries and volumes for the school library and such expenditures as are not provided for by the State Legislature.—*Science*.

TO BEGIN HEALTH SURVEY—STATE OFFICIALS SELECT SHELburne FALLS FOR SECOND MUNICIPAL STUDY—Shelburne Falls has been chosen by the State Department of Public Health as the second community wherein to conduct a comprehensive health survey. The six weeks' survey in Winchester will be completed at the end of next week. The Shelburne Falls survey will begin next Monday and will continue for a month.

Shelburne Falls was chosen as a rural community and the result of the survey there will be compared with that from Winchester, which is in the metropolitan district.—*Boston Herald*.

MAINE DOCTOR INDICTED TWICE—DEATHS OF GIRLS LAID TO ILLEGAL SURGERY—Lewiston, Me., June 15 (AP)—Dr. Charles K. Donnell of Lewiston was indicted on the charge of murder in connection with the death of Miss Blanche Louise Williams of Portland last May, and also on the charge of manslaughter as the result of the death of Miss Nellie Seaton of Richville, last March, by the Superior Court grand jury. Both deaths are alleged to have followed illegal operations. Dr. Donnell, who was already under \$10,000 bond on the murder charge, was immediately arrested on the manslaughter charge. He furnished bail at \$10,000 and was released late this afternoon.—*Boston Post*.

DR. MILTON J. ROSENAU AND DR. CHARLES F. WILINSKY MET WITH AN ACCIDENT—Although Dr. Rosenau and Dr. Wilinsky were involved in an automobile accident while engaged in the work of the Palestine Survey Commission the reports indicate that neither suffered harm, although two others with them were injured.

According to press reports the automobile in which they were riding was overturned on the road near Afulsh.

Congratulations to Dr. Rosenau and Dr. Wilinsky and their families are in order.

NOTICES

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:
Physiotherapy Aide

Applications for physiotherapy aide must be on file at Washington, D. C., not later than July 30 and November 12, 1927. The date for assembling of competitors will be stated on admission cards sent to applicants and will be about ten days after the date for the close of receipt of applications. Applications received after closing date will be considered for next date.

The examination is to fill vacancies in the Field Service of the Veterans' Bureau and the Public Health Service, and in positions requiring similar qualifications.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of United States Civil Service Examiners at the postoffice or custom house in any city.

HERB DOCTOR AGAIN BEFORE COURT

MR. HAZARD of South Lancaster, an herb doctor, who has previously been prosecuted for violating the law, is again before the court. His present case will be heard shortly.

REMOVAL OF THE OFFICE OF DR. GEORGE GILBERT SMITH

DR. GEORGE GILBERT SMITH has moved his office to 6 Commonwealth Avenue, Boston.

REMEMBER to file application for Narcotic Drug License before July 1, 1927.

REPORTS AND NOTICES OF MEETINGS

UNION HOSPITAL IN FALL RIVER

CLINICAL STAFF MEETING

THE regular monthly Clinical Staff meeting of the Union Hospital in Fall River will be held at the Fall River Country Club, June 23, 1927, at 5:30 p. m. All physicians interested are cordially invited.

M. N. TENNIS, M.D.,
Secretary.

June 13, 1927.

THE MEETING OF THE MAINE MEDICAL ASSOCIATION

THE annual meeting of the Maine Medical Association was held in Portland at the Eastland, June thirteenth, fourteenth and fifteenth.

The officers elected are as follows: President, Dr. Herbert F. Twitchell of Portland; President-elect Dr. Frank Y. Gilbert of Portland; Vice-presidents, Drs. W. N. Miner of Calais and

Charles W. Bell of Strong; Secretary-Treasurer, Dr. B. L. Bryant of Bangor.

Councillors are: First district, E. W. Gehring, Portland; second district, John Sturgis, Auburn; third district, W. E. Kershner, Bath; fourth district, George E. Young, Skowhegan; fifth district, C. C. Knowlton, Ellsworth; sixth district, A. K. P. Small, Bangor.

These committees were elected: Scientific, E. H. Risley, Waterville; T. J. Burrage, Portland; L. J. Johnson, Bangor. Legislative, L. P. Gerrish, Lisbon Falls; J. D. Phillips, Southwest Harbor; F. W. Mitchell, Houlton. Venereal Diseases and Their Prevention, G. H. Coombs, Augusta; H. W. Stanwood, Rumford; H. J. Hunt, Bangor. State Hospitals, E. D. Merrill, Dover-Foxcroft; L. T. Snipe, Bath. Cancer, H. E. Thompson, Bangor; Mortimer Warren, Portland; John Hewat, Lewiston. Health in Schools, T. A. Foster, Portland; C. A. Moulton, Hartland; H. D. McNeil, Bangor; J. A. Spalding, Portland; A. H. Parcher, Ellsworth. Hospitals, C. H. Young, C. M. Robinson, Portland; G. H. Stone, Bangor. Medical Defense, E. G. Abbott, Portland; Allen Woodcock, Bangor; W. G. Chamberlain, Fort Fairfield; E. V. Call, Lewiston; George E. Young, Skowhegan. Public Relations, F. W. Mann, Houlton; E. D. Merrill, Dover-Foxcroft; R. D. Small, Augusta; G. A. Coombs, Augusta.

J. A. Spalding of Portland, was named neurologist.

B. L. Bryant of Bangor, and F. Y. Gilbert of Portland, were chosen delegates to the American Medical Association, with W. E. Webber of Lewiston, and L. P. Gerrish of Lisbon Falls, as alternates.

E. W. Gehring of Portland was chosen delegate to the National Council.

These delegates were chosen to the various state societies: New Hampshire, T. A. Foster, Portland; Vermont, George E. Young, Skowhegan; Massachusetts, S. N. Marsh, West Enfield; Rhode Island, E. H. Bennett, Lubec; Connecticut, E. S. Merrill, Bangor.

J. A. McDonald of East Machias, and Lester Adams of Hebron, were named visitors to the State Sanatoria.

The president and secretary, with L. P. Gerrish of Lisbon Falls, F. Y. Gilbert of Portland, and W. E. Ellingwood of Rockland were named to the New England Medical Council.

The holding of clinics in various communities outside of the larger cities, that doctors not connected with any hospital might have the advantage of this instruction, was recommended by the House of Delegates of the Maine Medical Association at its session Tuesday afternoon.

Consolidation of the *Journal of the Maine Medical Association* with the *BOSTON MEDICAL AND SURGICAL JOURNAL*, together with that of the other medical journals of the New England

States, the consolidation to be known as the *New England Journal*, also was recommended by the House of Delegates.

General approval was voiced by the House of Delegates of the action of the Committee on Public Relations of the Maine Medical Association, the State Board of Health and the Maine Public Health Association in connection with health work in Maine.

Endorsement was given to the meetings of the secretary and officers of the Association, which had been held twice in the course of the last year, once in Bangor and once in Portland.

Dr. Thomas J. O'Brien of Boston, speaking as a delegate from the Massachusetts Medical Society, urged that physicians make more effort to keep the public informed and counteract legislative activities of "professional lobbies" of those opposed to medical science. This matter, he believed, should have equal consideration with scientific education and the promotion of public health. Dr. John Bapst Blake of Boston also spoke for the Massachusetts Association.

Dr. James S. Stone Ex-President of the Massachusetts Medical Society was a guest at the Annual dinner and addressed the meeting.

Mrs. David Parker of Manchester, N. H., vice-president of the National Women's Auxiliary and president of the Women's Auxiliary of New Hampshire outlined the purposes of the organization, which are to assist in informing the public as to the work of the physician and to aid in public health work.

She said that in the five years activity of the organization it had formed branches in 27 states and nine more were ready to be organized.

The advantages which such an organization has been to the Texas Medical Association were related by Dr. Holman Taylor of Fort Worth, who explained that Texas was the first state in which the auxiliary had been formed.

The clinics and scientific discussions were very instructive. About two hundred and twenty-five members of the Association were in attendance.

Maine stands as one of the foremost states in medical progress and is especially prominent in its public health activities. This annual meeting was of an especially high order.

NORTH SHORE MEDICAL FRATERNITY

THE June meeting of the North Shore Medical Fraternity was held at Hunt's Grill, Lynn, Mass., Thursday evening, June 2, and was addressed by Dr. Louis Wolfson who spoke on "The Relationship of Bronchoscopy to General Medicine." The paper was discussed by Dr. P. W. Wainshel.

The Annual Outing of the North Shore Medical Fraternity was held on June 22, at the Walker Gordon Farm at Needham, Mass.

ELLIS MICHELSON, M.D.

THIRD CLINICAL CONGRESS OF THE CONNECTICUT STATE MEDICAL SOCIETY

THE members of the Massachusetts Medical Society are cordially invited to attend the Third Clinical Congress of the Connecticut State Medical Society, which will be held in New Haven on September 20th, 21st, 22d, 1927. The first Congress was held in 1925, and since then it has become one of the important medical meetings in the East. During the Congress there will be presented about twenty papers and demonstrations of topics of wide practical value and timely appeal. Subjects in medicine, surgery, diagnosis and the broader applications of the specialties will be included. The speakers are all invited from outside the State of Connecticut and an effort is made to have each topic presented by a recognized authority.

The sessions of the Congress will be held in Sprague Hall, one of the newer and the most comfortable of the auditoriums of Yale University. A University dormitory provides living quarters for members of the Congress during their stay in New Haven, and it is contemplated that the University Dining Hall will be in operation. Garage space for the cars of members will be provided.

The fee for the Congress will be \$5.00, which will include admission to all sessions of the Congress, a copy of the abstracted papers presented during the Congress, and garage accommodations. Rooms in the dormitory are charged at the rate of \$2.00 per night, and the tariff in the dining hall will be reasonable.

A copy of the completed program will be sent to anyone desiring it, upon application. All inquiries regarding programs, registration and room reservation should be addressed to Dr. Creighton Barker, 129 Whitney Avenue, New Haven, Connecticut.

HARVARD MEDICAL SOCIETY HOLDS LAST MEETING

THE last meeting of the Harvard Medical Society for the year 1926-27, was held Tuesday evening, May 17, at the Peter Bent Brigham Hospital. The program of the evening was demonstration of cases, and a lecture on the "Mechanics of Production of Fracture," by Dr. Emmett Rixford, Professor of Surgery at Stanford University, California.

The first case, presented by Dr. Huggins of the Medical Staff, was a sailor of 37, who entered the hospital complaining of pain in the right knee and left elbow of four months' duration. In 1918 he was a patient in this hospital, being treated for the same symptoms, together with aortic valve involvement, until discharge. In 1919 he acquired a primary luetic infection, which

was treated by the government. Since 1921 he has had a recurrence of his joint trouble every year. Two years ago beginning atrophy of the muscles of the left arm and shoulder and right leg was noticed, which has gone on with loss of power in the arm and leg until the present. His blood Wassermann was positive and lumbar puncture showed positive globulin, positive Wassermann, and a positive gold curve. Differential diagnosis before treatment was narrowed to atrophy of luetic origin or to true progressive muscular atrophy. Treatment has consisted of two intravenous arsphenamine injections and salicylates for his joints, from which he has obtained relief from pain and function of his right knee. The case was presented because of the interesting nature of his muscular atrophy and the combination of atrophy with what appears to be a typical arthritis due to rheumatic fever. He now has aortic insufficiency and mitral stenosis with typical murmurs. Opinion given indicated that it was a luetic affair, there being an upper motor neuron lesion.

The next case, an Irish-American widow of 48, came to the hospital complaining of disability of her left shoulder. Three and one-half months before her admission she fell on the ice, following which she experienced pain and disability in her left shoulder. Her arm was bandaged and put in a sling by her doctor, but she refused X-rays. Her shoulder disability has persisted practically unchanged until her entry a week ago. Physical examination showed she was practically unable to abduct the arm to any degree. There was marked concavity at the region of the deltoid and a fullness anteriorly in the left shoulder. Before X-rays a diagnosis of chronic dislocation of the left shoulder was made. X-ray showed an apparently small fissured fracture at the neck of the scapula extending up about 1 cm. transversely to the articular surface of the glenoid. Dr. Rixford in discussing the case said, "It is a partial fracture. There is no displacement, simply a little gaping of the bone—a fracture, therefore, that can only be produced by traction. There is no mechanism that I could think of by which such a gaping, partial fracture could be produced except by traction. The thing is of particular interest in its relation to the cause of dislocation of the humerus but inasmuch as this fracture has occurred along with the dislocation it goes a long way to establish the abduction as a part of the mechanism of production of dislocations of the shoulder." Open reduction was suggested by Dr. Cheever, Dr. Osgood, Dr. Wilson, and also by Dr. Rixford, as the remedial measure.

Dr. Rixford was then introduced by Dr. Cheever, and began his lecture by saying, "Bone is material, and the anatomical relations in which materials of which bridges are made and beams of houses built, are exactly duplicated in the bones. Thus bone, like building material,

gives way under either tensile stress or compressive stress." That there is always both a tensile and a compressive stress in producing most fractures, seems certain, since there are tensile stresses along the convexity of the curve, and compressive stresses along the concavity, in all fractures, especially those caused by bending. In all such fractures, there is usually a loose fragment on the side of the concavity, and from this finding we know just where the force was applied which resulted in the fracture.

Fractures caused by a yielding to compressive stress are found particularly in children, most commonly at the lower end of the radius, resulting in buckling fractures. In adults the same mechanism produces the so-called Colles' Fracture, due here to the older bone yielding to tensile stress, while in the case of children the younger bone yields to compressive stress.

In the case of the shoulder, abduction is limited by contraction of the lower limit of the capsule and by impingement of the greater tuberosity upon the glenoid. If abduction is forced, we may get yielding of the bone (scapula) near the point of attachment of the capsule, causing a fissure running up into the neck of the scapula, or a complete fracture of the neck, or the capsule may rupture, allowing a dislocation of the head of the humerus. Chiselling off of the head of the greater tuberosity is possible here also. In children, from the same mechanism, we may get a buckling fracture of the humerus, especially where the compressive stresses are maximal in proportion to the strength of the bone. The *acromion* is but seldom involved in abduction fractures. Dr. Rixford stated that oftentimes fissures or fractures of the neck of the scapula occurred in attempting reductions of dislocations of the shoulder of adults. In adults usually the surgical neck of the humerus is fractured by the abduction mechanism.

In speaking of spiral fractures of the humerus Dr. Rixford stated that the degree of the fracture depends upon the amount of rotation. Fissures are possible where the motion stops at the right moment, but where the rotation is continued, the fissure spreads and the bone opens out. As it opens out, tensile stresses develop on the inside of it, and compressive stresses on the outside. The bone yields to the tensile stresses and it breaks in a longitudinal fissure joining two of the limits of the spiral. In the right femur, tibia, forearm and arm, a fracture by rotation is always in a left handed spiral. On the left side it is always a right handed spiral. The reason for this is the fact that we cannot internally rotate our members enough to produce a fracture, while we can in external rotation. In spiral fractures the bone is pulled away from the periosteum and the periosteum is therefore torn along the spiral, but not along the longitudinal component of the fracture. Thus we have the so-called periosteal bridge." The fragments of

these spiral fractures are very sharp and if much movement takes place these will cut nerves, muscles and blood vessels. If a patient tries to walk with a spiral fracture, longitudinal displacement occurs, also the fragments become devoid of periosteum, and tissue intervention between the fragments makes reduction practically impossible. For these reasons Dr. Rixford advocates open operative treatment of spiral fractures in most cases, especially of the tibia, because the deformity being one of external rotation, means walking with the feet out, and breaking down of the arch.

In speaking of fractures of the skull Dr. Rixford pointed out that with force applied to the vault, the cranium flattens and indents, the tensile stresses on the inner surface resulting in the fracture of the inner table more frequently than the outer table. In infants, this mechanism has been called by Dr. Rixford the "dishpan fracture," because the bone bends in without breaking and becomes concave. The dent in the bone is reduced by drilling a hole through the bone, putting in a hook and pulling it out.

In gun shot fractures Dr. Rixford pointed out that the size of the orifice of exit is always larger than the orifice of entrance. This means that a portion of bone is pushed down but you have a kind of balance from tensile to compressive stresses.

In discussing fractures of the ankle, Dr. Rixford stated that, contrary to the abduction notion, the vast majority of fractures at the ankle are not caused by pure abduction at all. What happens, is the old external rotation again, for the fracture is a sort of spiral fracture. In treating such fractures as these (Potts' Fracture) Dr. Rixford advised plaster of Paris and this to be used above the knee, along with manipulation to correct the displacements while the plaster is setting.

ADDRESS ON CANCER BY DR. BLOODGOOD*

DR. JOSEPH C. BLOODGOOD of Baltimore visited Boston and Lynn on June 16th to help in the program for cancer control conducted by the State Department of Public Health. At a well attended meeting held at Pilgrim Hall he spoke on the subject: "How can you protect yourself against cancer?"

A few introductory remarks were made by Dr. George H. Bigelow, Commissioner of Public Health, who stressed the importance of early recognition of cancer and prompt institution of adequate treatment. Of the 5000 deaths from cancer each year in this state, he emphasized that 2000 are preventable. The average interval between the first symptom and the first consultation with a doctor is eight months. Cancer is a race against time, and each day saved means

*Notes by our special reporter.

a reduction in mortality. Diagnostic and therapeutic resources are being extended throughout the state. There are now five cancer clinics in districts outside of Boston, and the Pondville Hospital for the care of cancer patients.

Dr. Bloodgood, in opening his address, said that he had been asked by the Governor whether in his opinion the Commonwealth of Massachusetts was justified in appropriating money for a cancer hospital and cancer clinics in the state. Dr. Bloodgood stated that this was decidedly no mistake. He explained that to make any progress we must venture some. What the future of the cancer hospital and clinic will be is not known, but something must be done to meet the present situation with respect to cancer.

The medical profession is in a different position from fifty years ago. The cancer clinic held in Lynn this morning was a demonstration of what education can do for cancer. In 1900 a study was made of malignant disease at the Johns Hopkins Hospital, and in spite of the fact that the disease was well known, out of every 100 patients admitted with cancer, half were hopeless cases. Now less than five per cent are hopeless. This difference is due to education, largely through the press. Of the 19 patients who came to the clinic in Lynn, only one had hopeless cancer. Six were precancerous; of these two or three may be saved from developing into hopeless cancer. Of the people who came thinking they had cancer, more than half did not have cancer.

Children and adults must be educated in the rules of health. When we find that diseases are curable, we must disseminate the information to the public and the profession. Only the public press can do this. Several people reporting at the clinic never had consulted a doctor until they had read about cancer in the newspapers. The social visiting nurse carries the message to those who cannot read.

Why do we think we can cure cancer? As far as we know, cancer never begins as cancer, but as something that is not cancer—that something you, as a rule, are aware of but do not know it means the beginning of cancer unless you have had special information.

Cancer of the skin begins in an area of the skin that does not look healthy, although every skin area that does not look healthy does not mean cancer. Lesions of the skin that may ultimately develop into cancer are scaly patches, unhealed sores and ulcers. If thorough cleaning with soap and water, alcohol and medicated vaseline make such areas heal, you may protect yourself from cancer. Moles and warts are best removed.

Cancer of the mouth also begins in unhealthy areas. Such irritation resulting from the use of tobacco, or from jagged teeth, produces sores that may develop into cancer. Here again thorough cleanliness is most important. Both cancer

of the skin and mouth are unnecessary diseases.

Twenty years ago abscess of the breast in nursing mothers was a common disease. Today it is rare. The nipple must be kept cleaner during nursing than when not nursing. We have prevented mastitis by teaching women to keep their nipples clean. Women who are not nursing must also pay attention to any irritation of the nipple. The same cleanliness will protect them from Paget's cancer of the nipple.

Cancer of the cervix is a terrible disease. It is more apt to attack women who have borne children. It follows injuries of childbirth that do not heal naturally—injuries which should be immediately repaired. Unrepaired, neglected, unknown, it may go on for years, just like the area of the skin, until finally there is a discharge, so that the woman knows something is wrong, and then it is too late because of a hopeless cancer.

Periodic examinations are a very practical part of modern medicine. The day of waiting until one is sick and then sending for a doctor is over. There is no better practice for women who have borne children than to go once a year to a physician for a periodic examination. Such examinations are an essential protection against cancer of the cervix. And indeed for all people under forty periodic examinations are advisable. Most of the cardiovascular diseases are like earthquakes—they start years before.

How can we get this message to the people? We depend upon the public press. We must have systematic courses on health in the schools. We must make more accessible to the public books that have been written on health.

Dr. Bloodgood concluded by answering a number of questions from the audience, as follows. Cancer of the stomach, colon and rectum in most cases gives sufficient warning. One must pay attention to messages from the abdomen, especially if such factors as excessive eating, smoking, worry, lack of exercise and fresh air have been eliminated. There is no evidence that cancer is caused by any particular foods. He advised the removal of any mole if there is uncertainty as to its malignancy. He mentioned the value of radium in cases where cancer has gone beyond the hope of surgery. Finally, he stated that cancer is not communicable or inherited, and if one member of the family has it, the value to the others is that greater precautions against cancer are taken than might otherwise be.

Several folders on the subject of cancer were distributed.

THE HISTORY OF MEDICAL PRACTICE— THE STATE OF ILLINOIS

ATTENTION, FORMER ILLINOIS DOCTORS,
ATTENTION!

DOCTORS who lived formerly in Illinois, or who are descendants of pioneer physicians of the

"Illinois country" will hear with interest that Volume One of the "History of Medical Practice in the State of Illinois" is ready for delivery.

The History has been written under the supervision of a committee appointed by the Illinois State Medical Society as a commemoration of its seventy-fifth anniversary but more especially to make a living tribute to those valiant men of the medical profession who played so able a part in the exploration, settlement and development of the Illinois country.

In this first volume of the History are set down events from the earliest available knowledge of conditions in the Illinois country, along through the days of the Aborigines, and commencing with the actual records when, in 1673 Father Marquette had medical attention in Chicago, up until the year 1850.

In the second volume (now in preparation), narration continues up until the present time. Future years will bring other volumes so that this History will be an ever virile monument to the men and incidents whom it would honor.

Research of years resulted in an opulent supply of material from which to compile this History and has evidenced to an almost unbelievable degree the vital part played by physicians in every angle of the exploration, settlement and development of a country that is one of the richest and most influential sections of the richest country in the world.

It must be remembered that originally the Illinois country encompassed a territory far greater than the area now known as the state of Illinois, Wisconsin, Indiana, Missouri, Kentucky and Iowa, as well as what is now Illinois, and even some sections of Ohio fell into that primitive epitome of the Illinois country. In the southern part of the state it was well into the Nineteenth Century before Missouri and Illinois ever acknowledged the natural divorce of interests made by the Mississippi river. Because of this, naturally enough, close interest in this history extends to physicians or to their descendants in practically every state in the Mississippi Valley or contiguous thereto.

Rare maps, unusual personal memorabilia and rare discretion in compilation, make this History of unique interest to doctors everywhere and to many laymen.

This History of medical practice in the state of Illinois, embodies in the course of its narration, an interesting and illustrated digest of the early efforts of white settlers in Illinois, with specific allusion to the share in these tasks, performed by medical men. Included are portraits of rare interest, reproductions of historic documents, excerpts from diaries, personal letters, human reminiscences of days fraught with peril, filled with hope, and not devoid of humor, through a period of about 250 years. From the

days of the "Chirurgeon" who attended Pere Marquette, through the massacres at Fort Dearborn, the years of Indian raids, down with the circuit-riding "saddle-bag" doctors, to these days of radium and radio, this History marches. Attics, family albums, safe deposit vaults, and state records have been ransacked to produce the material needed for this chronicle. Illinois holds today the honor of being the world's medical center. Progressive steps of this achievement, and its contributive factors such as hospitals, asylums, sanitarium and allied institutions and medical colleges are set forth in detail, both pictorial, documentary and narrative. In brief, this account epitomizes the almost unequalled growth of a community whose economic wealth is paralleled by its public health. Personal data of the men, of the organizations,—including pioneer army and navy physicians and surgeons and local, county and district societies, schools and hospitals as well as of the Illinois State Medical Society itself; various internationally famous medical discoveries made by Illinois men; the state's contribution to the world of research; medical libraries and periodicals existent in Illinois; campaigns for medical protection against enemies of public health; details of the various Medical Practice Acts; state sanitation from the notable drainage canal and the supervision of food supplies, vital statistics; meetings, officers, policies and finances of the State Society;—all this and more in accurate transcription make this History a miniature encyclopedia of scientific advance and desirable and hitherto unavailable information.

The edition is limited. It will not be reprinted. A place in every physician's library is merited by this volume, both as a tribute to the men who blazed the trail for modern scientific medicine and as an ever-present reminder and authority as to what is happening to medicine right in this state every day, so far as finance, discovery, legislation and public relations are concerned, and the men who are responsible for the heritage of trust for over two centuries and a half. Volume One is now ready. Volume Two will follow soon. Orders may be sent to Committee on Medical History, Illinois State Medical Society, Medical and Dental Arts Building, 185 North Wabash Avenue, Chicago, Illinois, Charles J. Whalen, M.D., Chairman.

BOOK REVIEWS

"A Textbook of Bacteriology." By HANS ZINSSER, M.D. Sixth Edition. D. Appleton and Company. New York. 1927. pp. 1053.

Bacteriology presents a more difficult problem for adequate treatment in textbook form than almost any other branch of medical science. Particularly in the field of immunology are the

changes and advances in our knowledge striking. The excellent way in which this volume has summarized the field of medical bacteriology is attested by the fact that this is the sixth edition of the work.

Dr. Zinsser has made this book far more than a textbook of bacteriology in the narrow sense. Together with the technical material usually presented are admirable discussions of the prevention, diagnosis and specific therapy of the infectious diseases. In other words, bacteriology is not presented merely as a laboratory specialty, existing for itself and by itself, but as the key to the problem of the infectious diseases.

A section on parasitology is contributed by Dr. E. E. Tyzzer, replacing that by General Russell in earlier editions.

The breadth of view combined with intimate knowledge of all phases of bacteriology presented in this volume make it invaluable for practitioner, student, or laboratory worker.

A Handbook of Diseases of the Stomach. By STANLEY WYARD, M.D., B.S., M.R.C.P. Humphrey Milford, Oxford University Press. 1927. 8vo., 387 pages.

This book is a concise, but at the same time quite comprehensive, discussion of the stomach and its disorders and diseases, written to meet the needs of the practitioner and to introduce a more rational viewpoint. It begins with an analysis of the anatomy and physiology in their bearings upon the clinical abnormalities, and is marked throughout by its constant effort to view clinical manifestations in the light of the known facts and the probabilities as to gastric function. From this the work has a distinctive character which commands attention. It also has a certain quality of force and enthusiasm, presumably reflecting the personality of the author, which increases its individuality. While most of the contents are fundamentally consistent with the usual teachings, much detail is added from the personal experience and opinions of the author. These numerous personal comments are not invariably such as can be accepted at once, but they are all suggestive and deserving of consideration. The reviewer subscribes, for instance, to his plea that in chronic gastritis the patient's experience be given attention in planning the diet. He is less ready to accept the statement (italicized in the text) that "in no circumstance should liquid paraffin be used in the treatment of a human being," and the only slightly less sweeping condemnation of bismuth. The surgical treatment of gastric ulcer is placed in a somewhat less favorable light than in most surgical reports; on the other hand the exploration of suspected cancer is urged with emphasis. For the symptomatic improvement of cancer, selenium injections are reported upon as sometimes of striking value.

To sum up, while this volume is perhaps one

which is better read in comparison with other works than as a final authority, still, from the large experience and the original thought upon which it is based, it represents an important addition to the literature of its subject.

Ultra-Violet Radiation. By ELEANOR H. RUSSELL, M.D., B.S., and W. KERR RUSSELL, M.D., B.S. Wm. Wood & Co., New York. Price \$5.

This volume of over 400 pages with 168 illustrations takes up in thirteen chapters the general subject of ultra-violet radiation and actinotherapy. The first nine chapters consist of the historical aspects of this subject and general considerations of radiant energy, natural ultra-violet radiation, carbon, tungsten and iron arc lamps, quartz mercury vapour lamps, chemical properties of ultra-violet radiation, physical properties and biological effects of ultra-violet radiation and the technique of using the same. One can readily see, therefore, that these chapters are of interest to the professor or student of physics and to technicians rather than to physicians practicing clinical medicine and wishing to study and learn something about the use of ultra-violet rays.

In the last four chapters they consider the use of ultra-violet rays in skin diseases, in tuberculosis, in disorders of nutrition and of the alimentary and respiratory system, and in other conditions for which it has been used. It is these last chapters which make this book of value to the general practitioner. They quote largely from the Finsen Institute and from Swedish and Danish observers.

There is a general attitude in this book which is far too prevalent in the medical profession in this country and which I regret to see is becoming increasingly more common to look upon the ultra-violet rays as something which will cure or at least benefit all illnesses to which man is heir. In asthma, for instance, they state that ultra-violet rays should certainly be tried. Jaundice and hemorrhoids are benefitted. Hyperacidity is relieved. Cirrhosis of the liver (!) is helped in some miraculous way by ultra-violet rays. Bronchiectasis usually shows improvement. They state that while "diathermy now seems the method of choice in treating pneumonia, ultra-violet radiation is extremely useful in the convalescent stage." This is such an absurd statement as to hurt the book to a very large extent. I am glad to note that they state that actinotherapy has no effect on emphysema. The pain, headache and insomnia of nephritis are often relieved and diuresis increased.

If the writers of this book had left out the last four chapters and confined themselves to the technique of ultra-violet rays and the various forms of lamps, the value of the book would have been increased. As it is, so much is claimed for this method of treatment as to prejudice any one against it.